ALLEN&HEATH

SQ-5

SERVICE MANUAL

ISSUE 2.5

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ALLEN&HEATH

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Notices

Legal Notice

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Servicing precautions – General Notes

Service Personnel: Service work should be carried out by technically qualified personnel only. Mains power is dangerous and can kill. Do not attempt to work on a linear or switched mode power supply if you are not suitably qualified to do so. Do not attempt to repair surface mount circuit assemblies unless you are suitably qualified and have the necessary facilities to do so. Replacement circuit assemblies can be ordered.

Service Facilities: Ensure a suitably sized worksurface is available. Ensure this is clear of dirt, debris and obstructions which may damage the equipment surfaces. Ensure adequate lighting. Use the correct tools for the job and ensure that they are in good working order. Ensure all workshop safety requirements are adhered to.

Safety Information: Failure to follow the appropriate service and safety procedures may result in personal injury. You must read and adhere to the Safety instructions available in the box with the finished goods or available to service centres via your Asset Library login.

Service information: Check that you have all the information you need before starting the service job. Refer to the Allen & Heath website for user facing information at such as firmware guides (including block diagrams), weights and dimensions and Technical Spec Data Sheets at www.allen-heath.com. For any other information contact Allen & Heath Product Support at https://support.allen-heath.com.

Saving Data: In order to preserve the customer data, you should save any console data onto two separate USB devices if applicable.

Mains Power: Connect the equipment to mains power only of the type described in the user guide and marked on the rear panel. The power source must provide a good ground connection. Ensure you always use an isolation transformer when working on any mains power supply unit.

Mains Cord and Fuse: Use the correct power cord as supplied with the equipment. Do not remove or tamper with the ground connection in the power cord. Heed the important mains plug wiring instructions in the Safety Instructions sheet. Always replace the

equipment mains fuse with the correct type and rating as marked on the equipment panel.

Static Discharge: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated before commencing servicing.

Opening the unit: Switch off and remove the mains power cord before opening the equipment. Ensure all power supply covers and safety shields are in place before applying power with the unit open for diagnostic fault finding.

Fault finding: In-warranty faults should be corrected by board swapping. If attempting an out of warranty repair at a component level, replace suspected faulty components only with those specified by Allen & Heath. The use of lower grade alternatives may degrade the performance or risk damage to the equipment.

Closing the unit: Before finishing, check the quality and accuracy of the service work carried out. Remove any dirt or debris as this may cause equipment failure in the future. Ensure all assemblies, harnesses and connectors are correctly aligned, plugged in and cable tied. Ensure that jumper settings and control configurations are correctly set according to the requirements of the customer.

Testing the unit: Before operating the equipment, read and adhere to the Safety Instructions for the unit. Test that the service work has been successfully carried out.

Shipping the unit: Use adequate packing such as the original packaging or purpose designed flight case if you need to ship the unit. To avoid injury to yourself or damage to the equipment take care when lifting, moving or carrying the equipment.

Important: Information provided is believed to be accurate, but research is ongoing, and improvements or changes can be made to the unit without notice. If you have any questions, please contact Product Support at https://support.allen-heath.com.

Battery Handling: **Batteries can explode with improper handling. Follow the following precautions if a battery is fitted to this product.**

- Battery replacement should be performed by qualified service personnel.
- Always replace with batteries of the same type.
- When installing on the PCB by soldering, solder using the connection terminals provided on the battery cells.
- Never solder directly onto the cells. Perform soldering as quickly as possible.
- Never reverse the battery polarity when installing.
- Do not short the batteries.
- Do not attempt to recharge batteries.
- Do not disassemble the batteries.
- Never heat batteries or throw them into fire.

Parts Identification

Parts List

Chassis

Part Number	Description	Qty
AA12145 (Prev AA11058)	Rear Panel Metalwork	1
AA11056	Front Panel Metalwork	1
AA11057	Base Panel Metalwork	1
AA11051-L	Left Side Panel - Metal	1
AA11051-R	Right Side Panel - Metal	1
AA11052-L	Left Side Trim - Plastic	1
AA11052-R	Right Side Trim - Plastic	1
AA11055	TFT LCD bezel	1
004-1650KITX	KIT SQ TFT SQ 7” (AE11026)	1
004-1696KITX	KIT SQ TFT 7" PCB MOUNT+PADS (AE11026)	1
AJ9842	Fader knob	17
AJ9844	Encoder knob	9
AJ10265	D-SHIFT Knob	1
004-1536	60x60mm Fan Assembly (single)	1
AB6571	AC Cable Clamp	1
AA11054	SQ I/O blank plate	1
AA11059	Light bar metalwork	1
AA11176	Light bar lens	1
004-935	LED UV/WH	1
AA11027	Key Mat Channel	4
AA11028	Key Mat Top Section	1
AK6915	20X8 feet	4
AA11029	Key Mat Lower Section	1
AA12006	Shield SQ EMC V2	1

*Refer to page 28 for 004-1696KITX details

SCREWS

Part Number	Description	Qty
AB9037	SCREW M3X5 CSK TRUNC outside mixer panels and front faders	92
AB0072	Screw M3x6 Pan Torx for PCB’s inside	100
AB8172	Nut Pot 9mm	10
AB0188	NUT M4 NYLOCK for Fan	8
AB7422	2.7X9 AB torx screws for connectors outside	62
AB5564	M3X12 pan torx screws for Power connector back	2
AB0102	NUT M3 NYLOCK Ground to chasis	15

CABLES

Part Number	Description	Connects	QTY
AH11116	CABLE CAT5 UTP 0.3M RJ45	CPU (AG10820) to Network (AG10938)	2
AH11274	CABLE USB 'CLIK-M' 0.16M	CPU (AG10820) to Network (AG10938)	1
AH11281	CABLE USB 'CLIK-M' 0.45M	CPU (AG10820) to Headphones (AG11069)	1
AL11100	WFMA SQ MAINS INLET-DC	Mains Inlet (AG10965) to DC-DC (AG10964)	1
AL11101	WFMA SQ-5 PSU-DC	PSU (AM11253) to DC-DC (AG10964)	1
AL11102	WFMA SQ MAINS INLET-PSU	Mains Inlet (AG10965) to PSU (AM11253)	1
AL11103	WFMA SQ 12V DC-FADER	DC-DC (AG10964) to Fader (AG10762)	1
AL11104	IDC WFM SQ CPU-FADER	CPU (AG10820) to Fader (AG10762)	1
AL11107	IDC WFM SQ CPU-NET	CPU (AG10820) to Network (AG10938)	1
AL11108	IDC WFM SQ AUDIO IN-HP	Audio Input (AG12560) to Headphone (AG11069)	1
AL11105	IDC WFM SQ-5 SURF-CH	Surface (AG10996) to Channel (AG10992)	1
AL11111	WFMA SQ FADER	Fader Wire Form	17

PCB

Part Number	PCB	Description	Qty
004-1346	AG12560	SQ5 Audio Input (Previously AG10963 - 004-920)	1
004-1350	AG12564	SQ5 Audio Output (Previously AG11018 - 004-933)	1
004-919	AG10962	SQ5 Connector	1
004-931	AG10992	SQ5 Channel	1
004-1794X		Fader Motor (W/ Wireform)	17
004-900	AG10762	SQ5 17 Fader	1
004-932	AG10996	SQ Surface	1
004-1504-5	AG10820	SQ CPU (Previously 004-1045)	1
004-1487	AG12853	SQ DSP (Previously 004-902)	1
AM11253		SQ5 PSU	1
004-922	AG10965	SQ Mains Inlet	1
004-921	AG10964	SQ DC-DC	1
004-918	AG10938	SQ Network	1
004-1643	AG11069	SQ Headphones (Previously 004-934)	1
AE10814	AG10816 (AG10816_3 see note*)	SQ LCD 4 Way - *AG10816_3 requires V1.5.9 or greater	4

*Read the 'Important Information' at the servicing section before fitting Audio Input/Output Board

Accessories

Part Number	Description
AP11332	SQ-5 Dust cover
SQ-BRACKET	SQ Bracket
SQ-5-RK19	SQ-5 RACK KIT

Parts Identification

AA11055
TFT LCD bezel

004-1650KITX
KIT SQ TFT SQ 7”
(AE11026)

AJ9842
Fader knob
QTY: 17

AJ9844
Encoder knob
QTY: 9

AJ10265
D-SHIFT Knob
QTY: 1

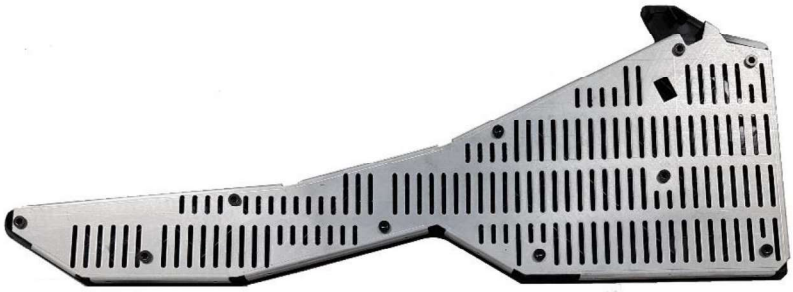
AB8172
Pot Nut
QTY: 10

AA12145
Rear Panel
Metalwork

AA11056
Front Panel
Metalwork

004-994
60x60mm Fan
Assembly (single)

AA11057
Base Panel
Metalwork



AA11051-L Left Side Panel - Metal
AA11051-R Right Side Panel - Metal

AA11052-L Left Side Panel - Plastic
AA11052-R Right Side Panel - Plastic

Parts Identification

AB6571
AC Cable Clamp

AA11054
SQ I/O blank plate

AA11059 Light bar metalwork
AA11176 Light bar lens
004-935 SQ5 LED UV/WH

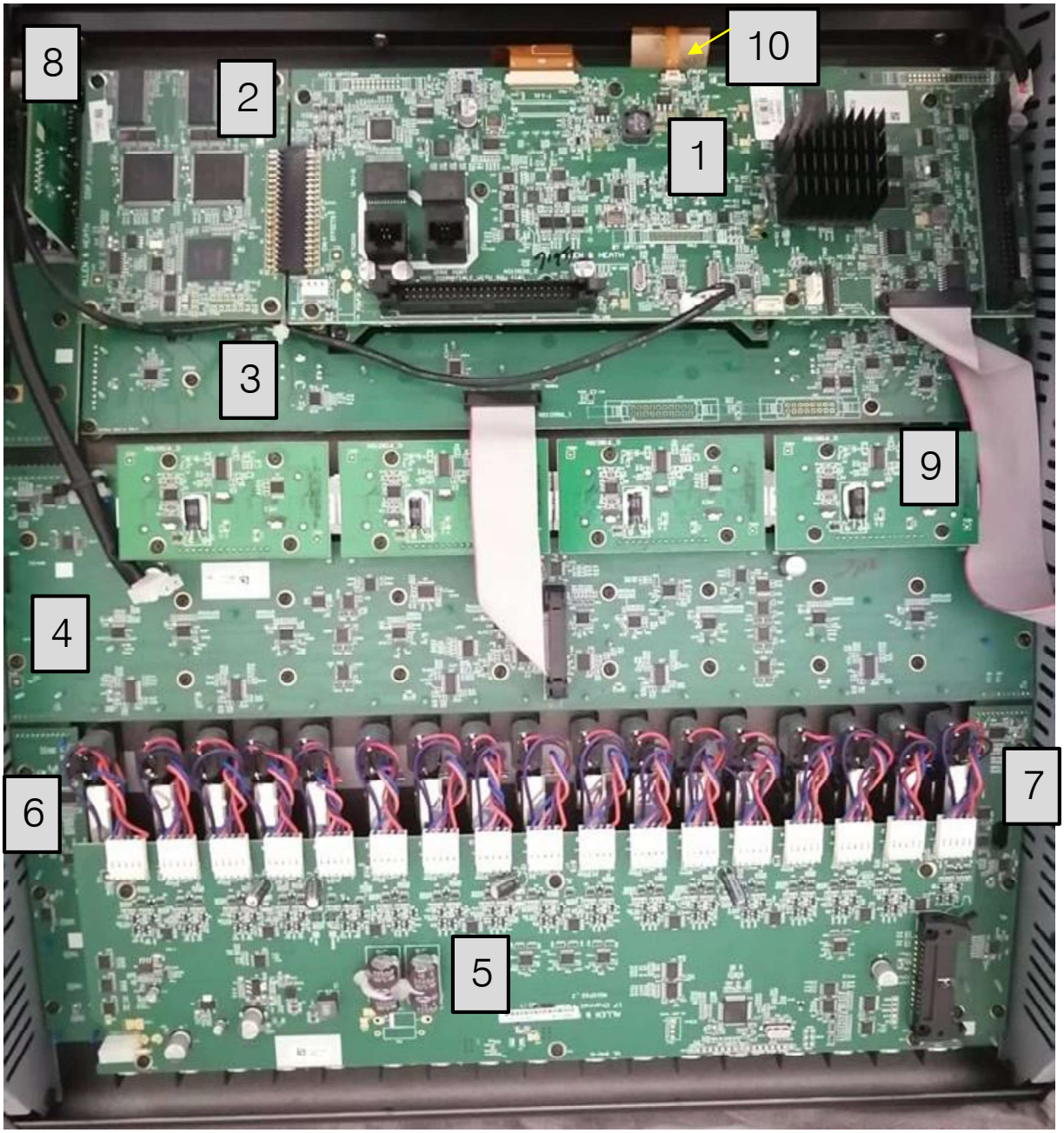
AA11027
Key Mat Channel
QTY: 4

AK6915
20X8 feet
QTY: 4

AA11029
Key Mat Lower Section

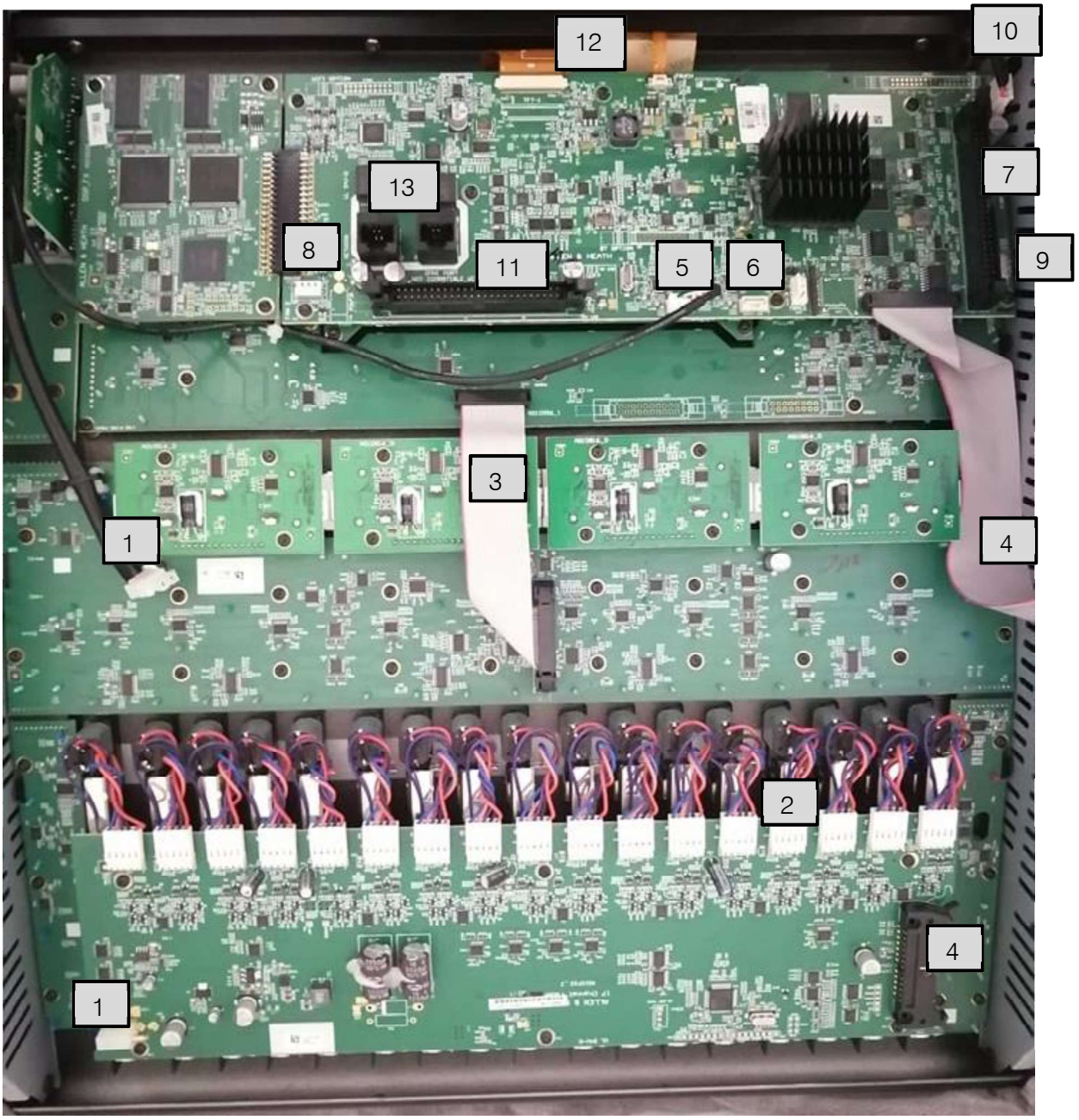
AA11028
Key Mat Top Section

Circuit Board Layout



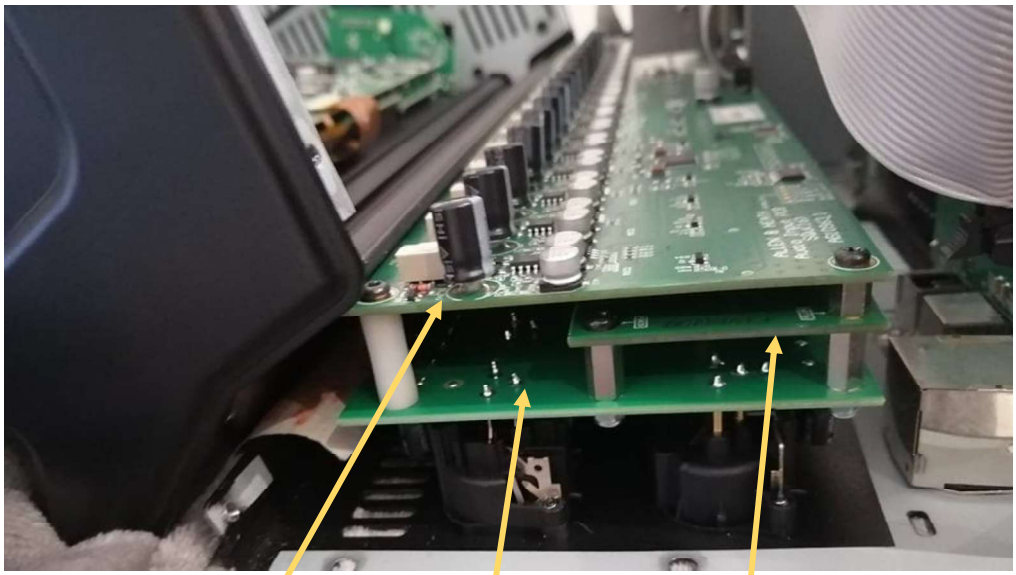
1.- CPU Board - AG10820 - **004-1504-5**
2.- DSP FX – AG12853 - **004-1487**
3.- Surface - AG10996 - **004-932**
4.- Channel Board - AG10992 - **004-931**
5.- Fader Strip - AG10762 - **004-900**
6.- Channel Board Extension (Mix select 5 to 12 keys) - AG10992 - **004-931**
7.- Channel Board Extension (Layers & Copy-Paste keys) - AG10992 - **004-931**
8.- Headphones/SQ Drive - AG11069 - **004-1643**
9.- LCD 4 way - AG10816 - **AE10814**
10.- LCD TFT - **004-1650KITX**

Wire layout



1.- 12v from DC-DC to Fader strip - **AL11103**
2.- Fader to Faders strip - **AL11111**
3.- From Channels to Surface - **AL11105**
4.- From CPU to Faders strip - **AL11104**
5.- Host USB from CPU to Network - **AH11274**
6.- Device USB from CPU to Headphones - **AH11281**
7.- From Network Board to CPU - **AL11107**
8.- FAN **(Wire as part of assembly)**
9.- FAN **(Wire as part of assembly)**
10.- LED light panel
11.- From Audio input board
12.- Screen TFT **(Wire as part of assembly)**
13.- Ethernet and Slink from CPU to Network - **AH11116**

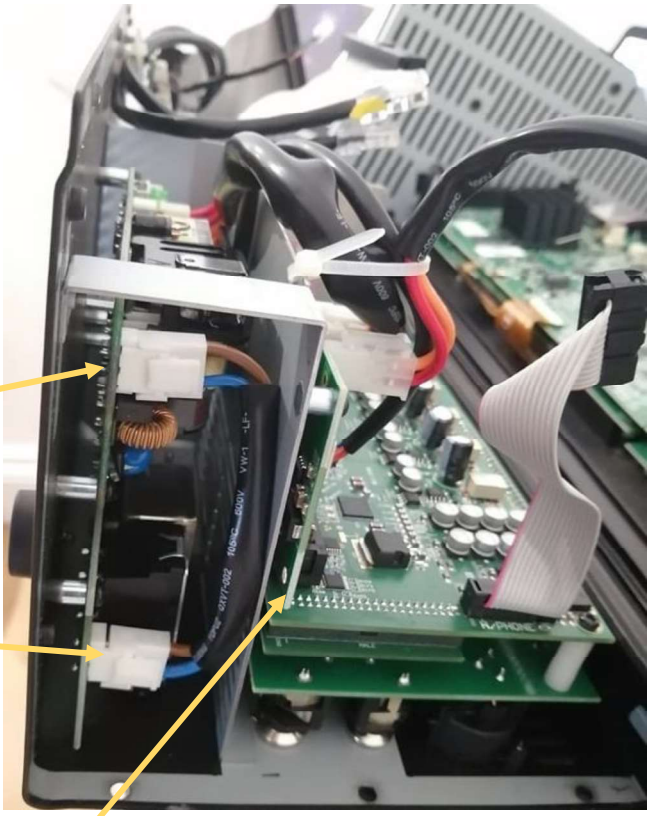
Parts Identification



Audio Inputs
AG12560
Previously AG10963
004-1346

Connector Board
AG10962
004-919

Audio Output
AG12564
Previously AG11018
004-1350



PSU
AM11253

Mains Inlet
AG10965
004-922

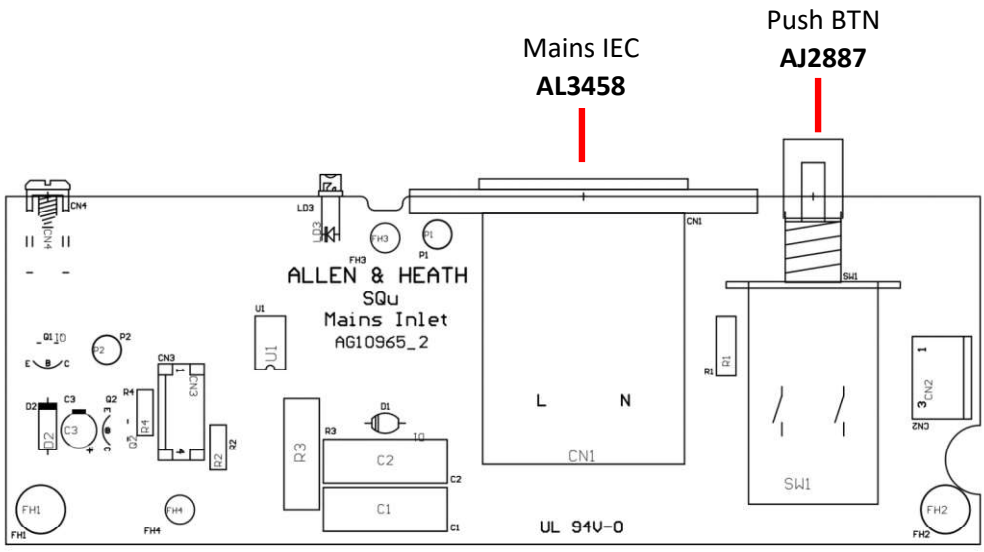
- CN2 of Mains Inlet to CN1 of PSU
- CN1 of PSU to DC-DC
- Connector board to CN2 of PSU

DC - DC
AG10964
004-921

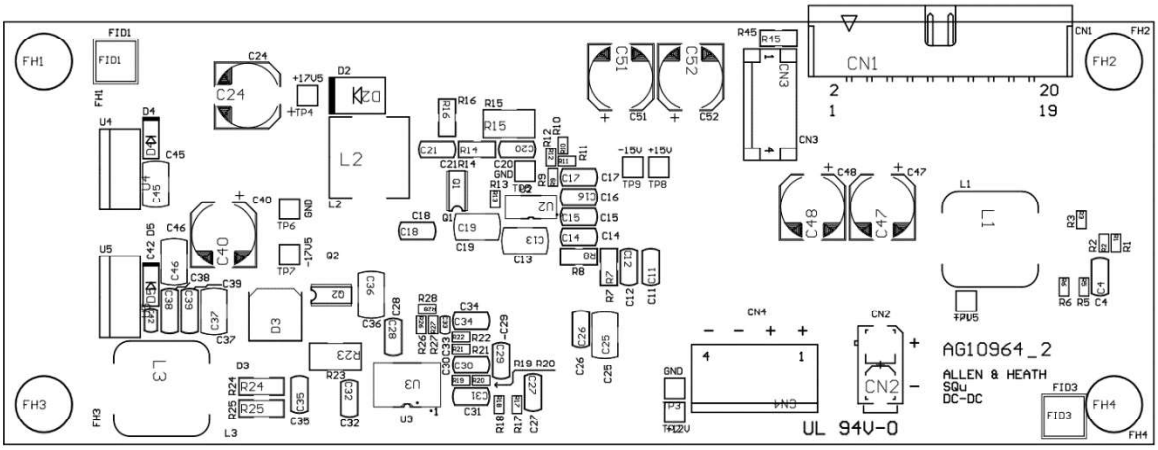
Circuit Board Identification

Part Number	AM11253
Description	SQ5 PSU

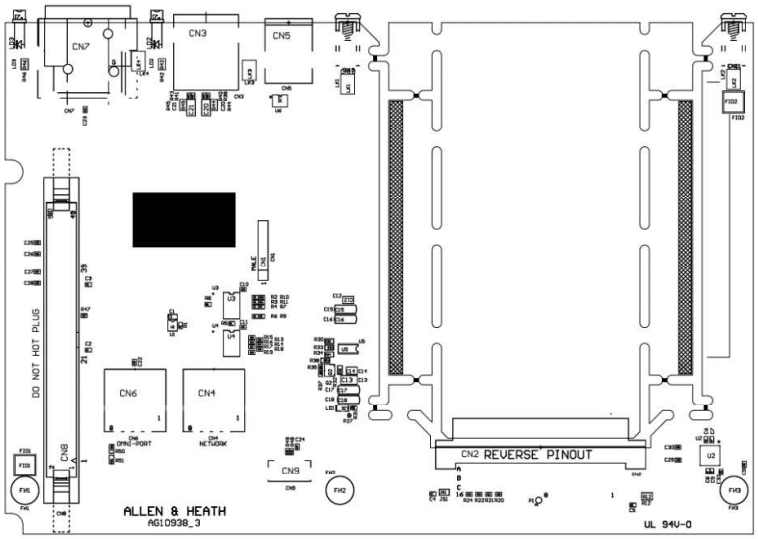
PCB	AG10965
Part Number	004-922
Description	SQ Mains Inlet



PCB	AG10964
Part Number	004-921
Description	SQ DC-DC

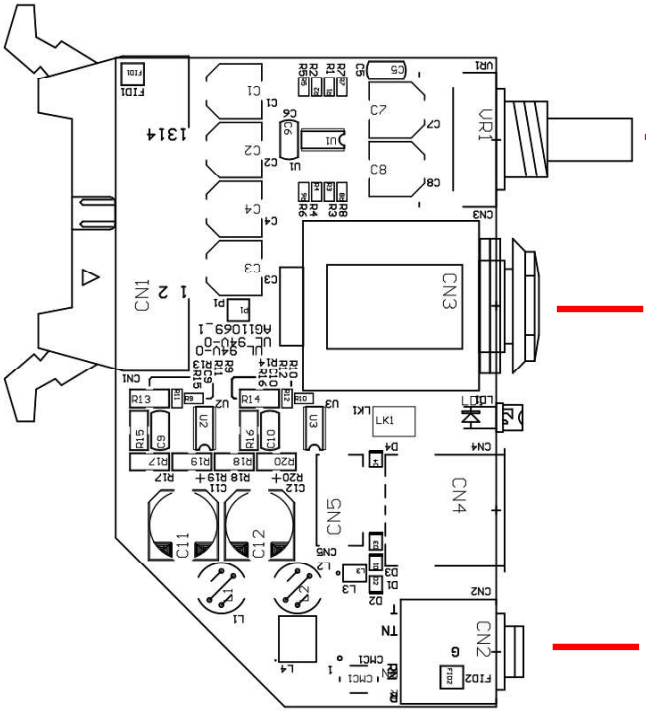


PCB	AG10938
Part Number	004-918
Description	SQ Network

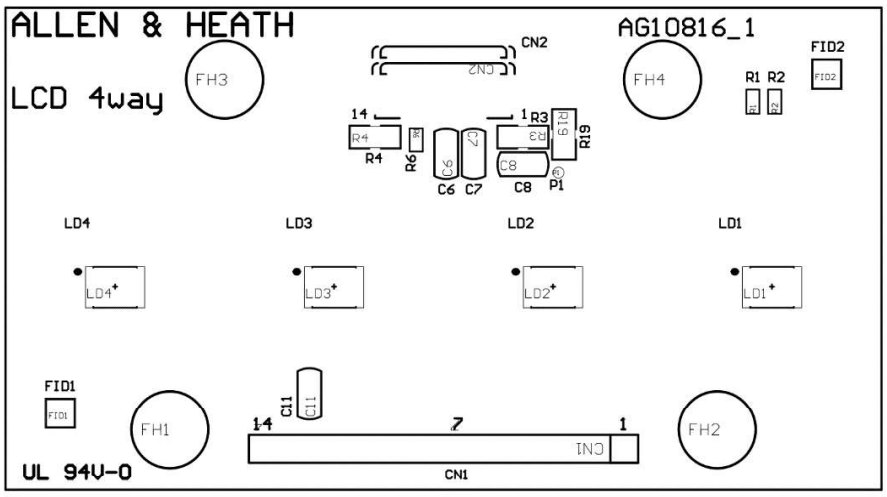


Parts Identification

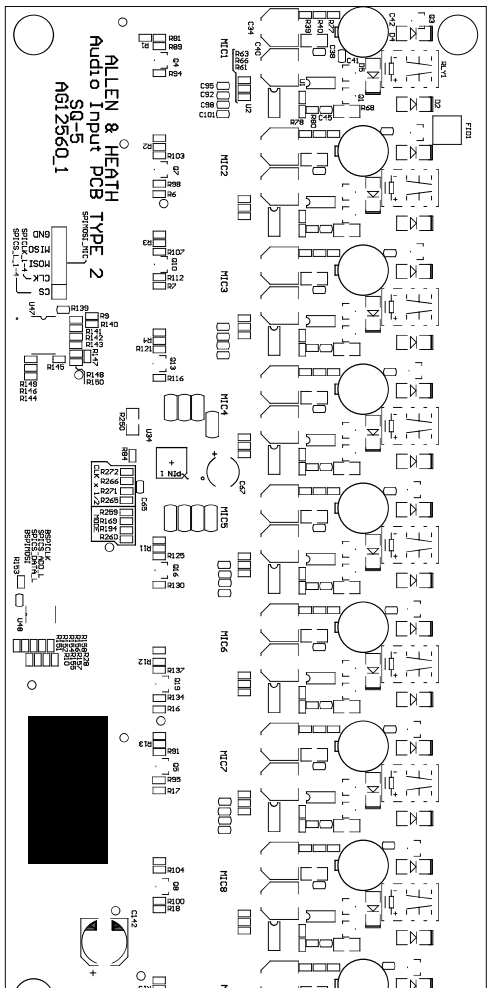
PCB	AG11069
Part Number	004-1643 (Previously 004-934)
Description	SQ Headphones

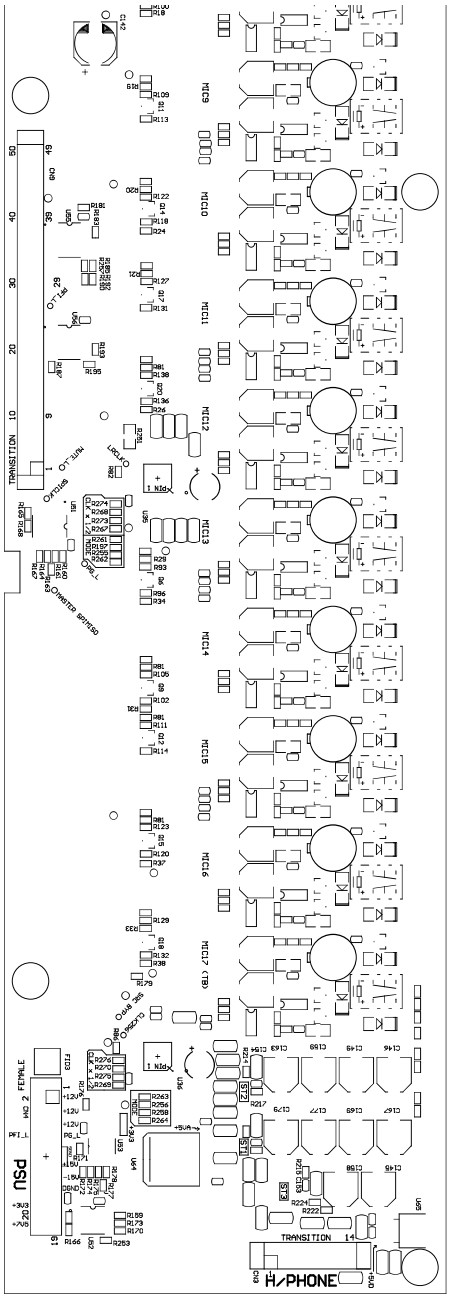


PCB	AG10816
Part Number	AE10814
Description	SQ LCD 4 Way

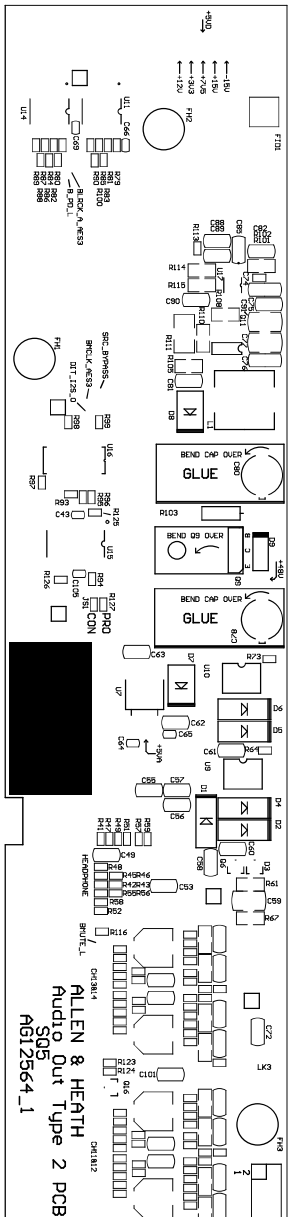


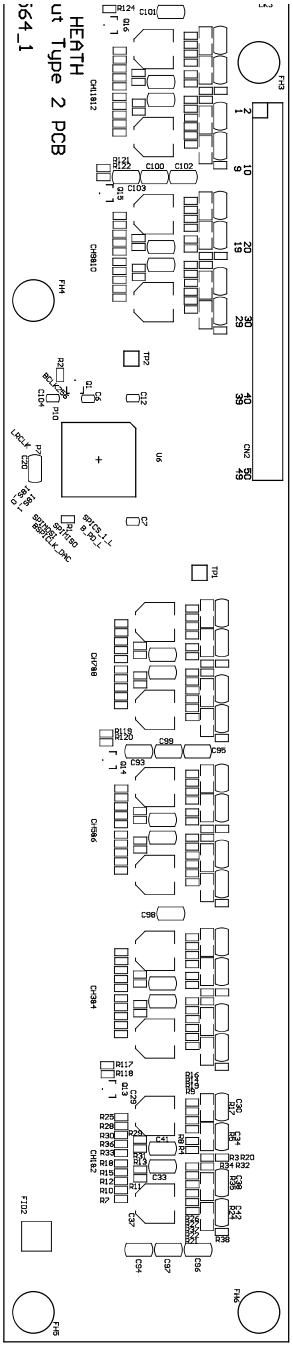
PCB	AG12560 (Previously AG10963)
Part Number	004-1346 (Previously 004-920)
Description	SQ5 Audio Input
*Read the 'Important Information' at the servicing section before fitting this part	





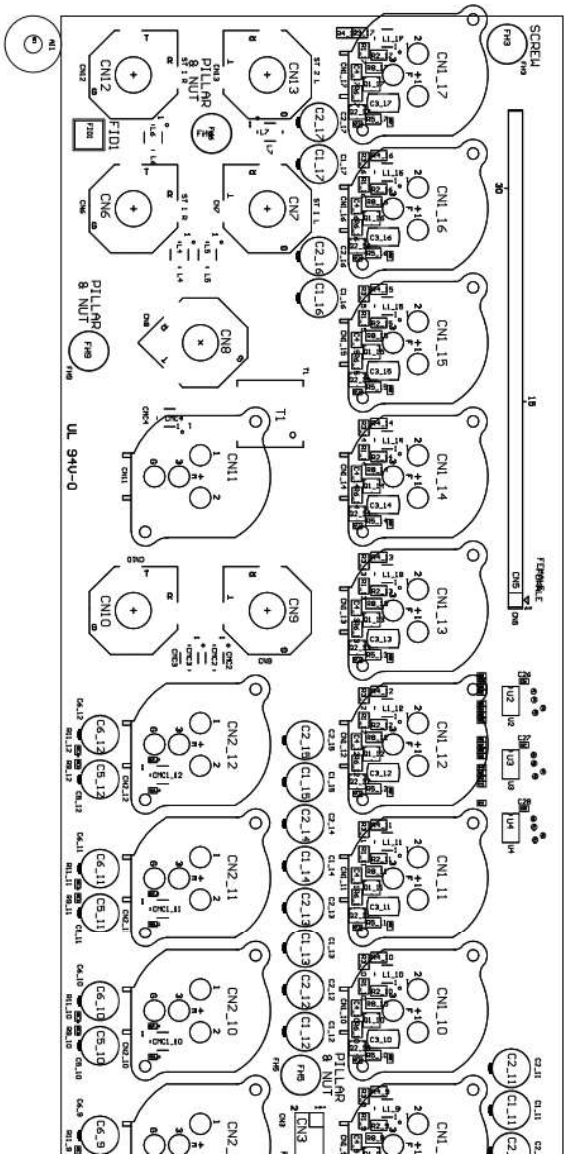
PCB	AG12564 (Previously AG11018)
Part Number	004-1350 (Previously 004-933)
Description	SQ5 Audio Output
*Read the 'Important Information' at the servicing section before fitting this part	

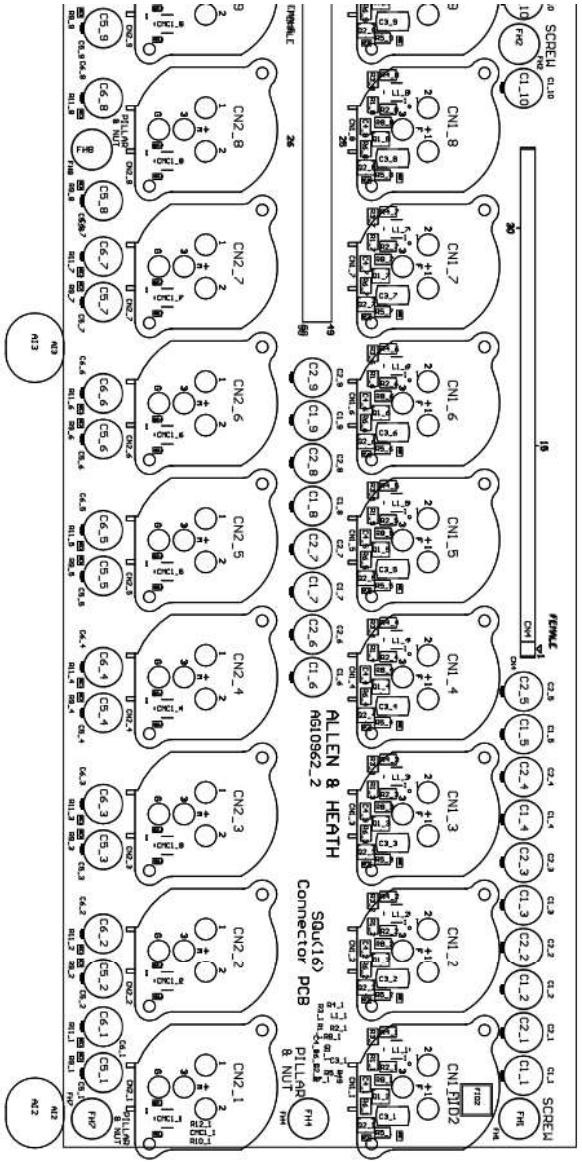




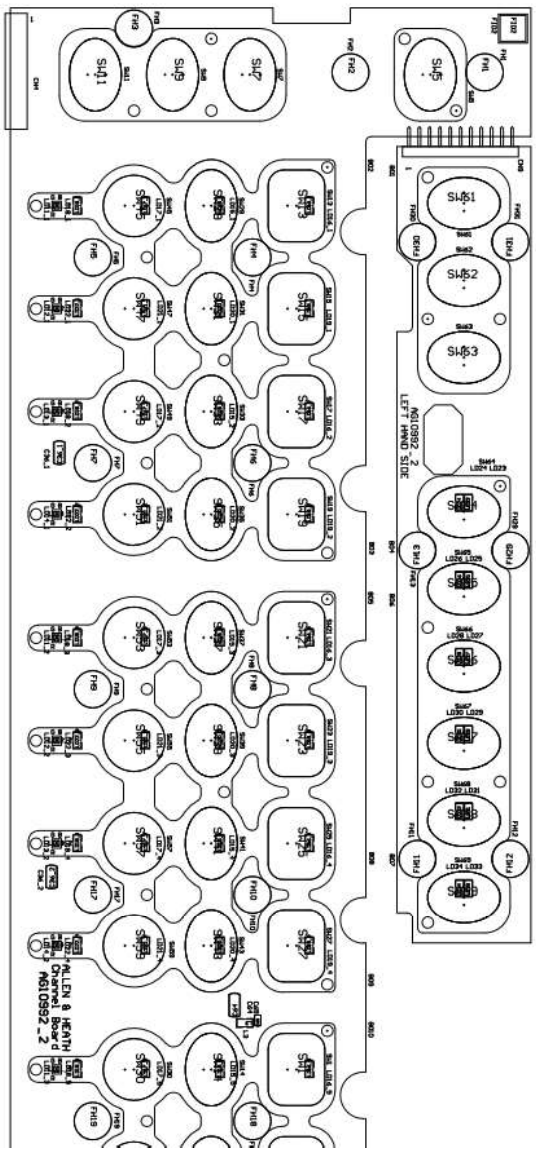
Parts Identification

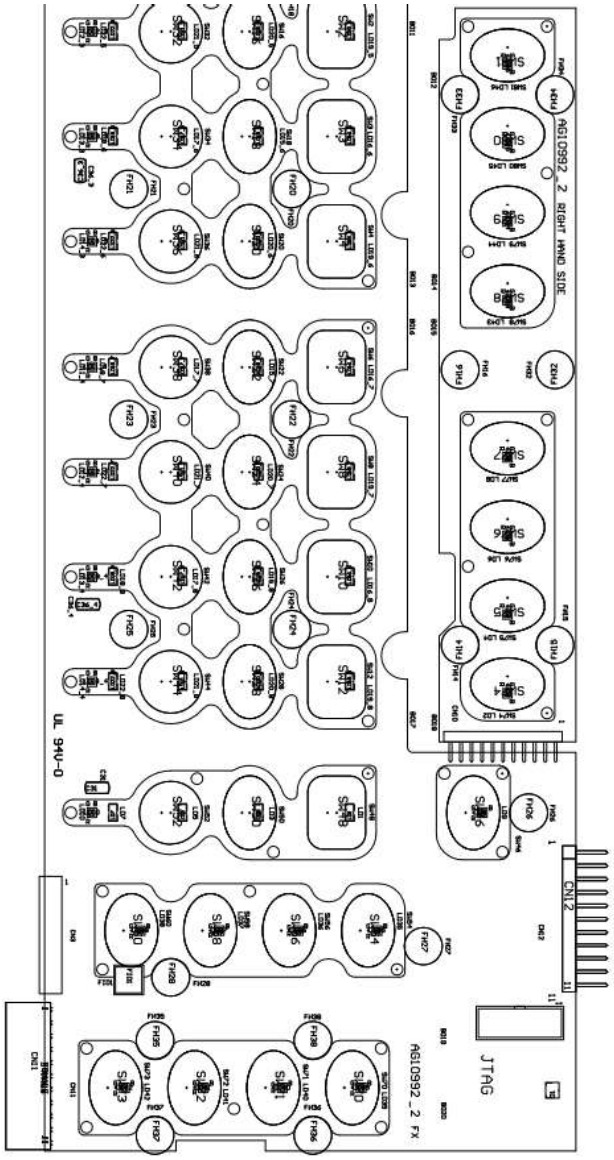
PCB	AG10962
Part Number	004-919
Description	SQ5 Connector



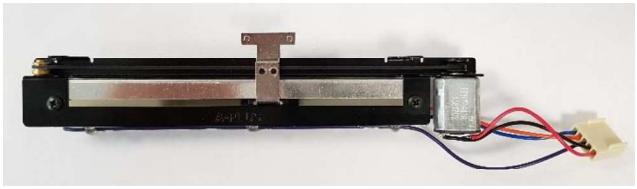


PCB	AG10992
Part Number	004-931
Description	SQ5 Channel

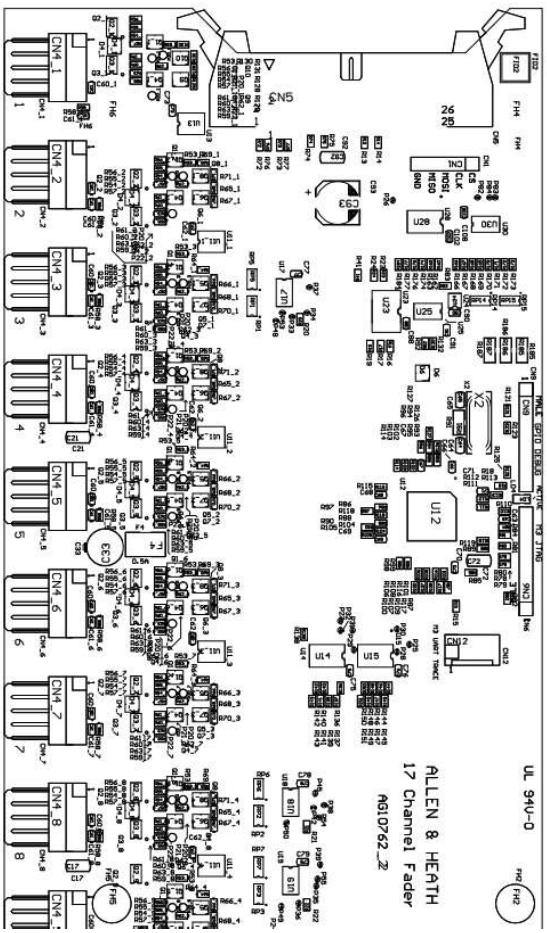


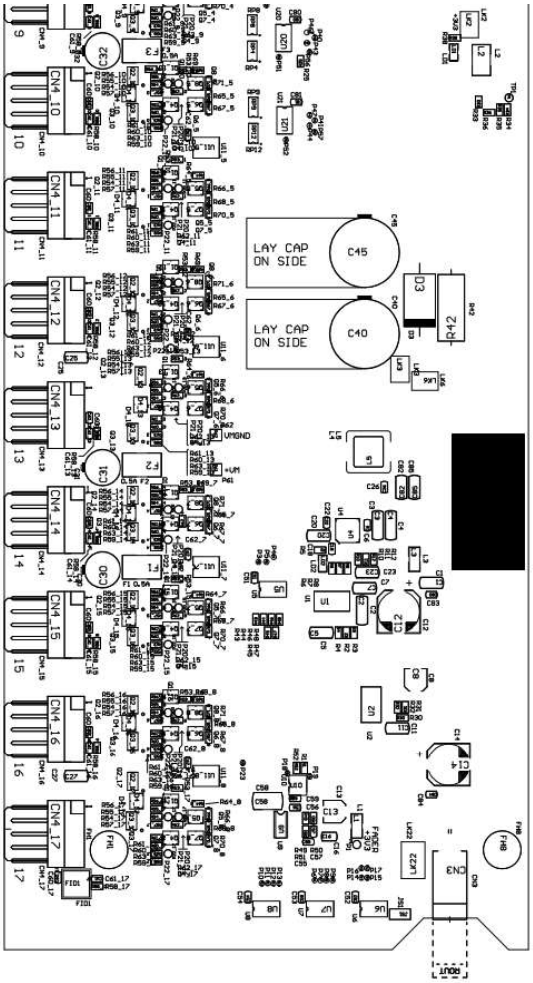


Fader Part Number	
Fader Motor	004-1794X
Wire form	AL11111



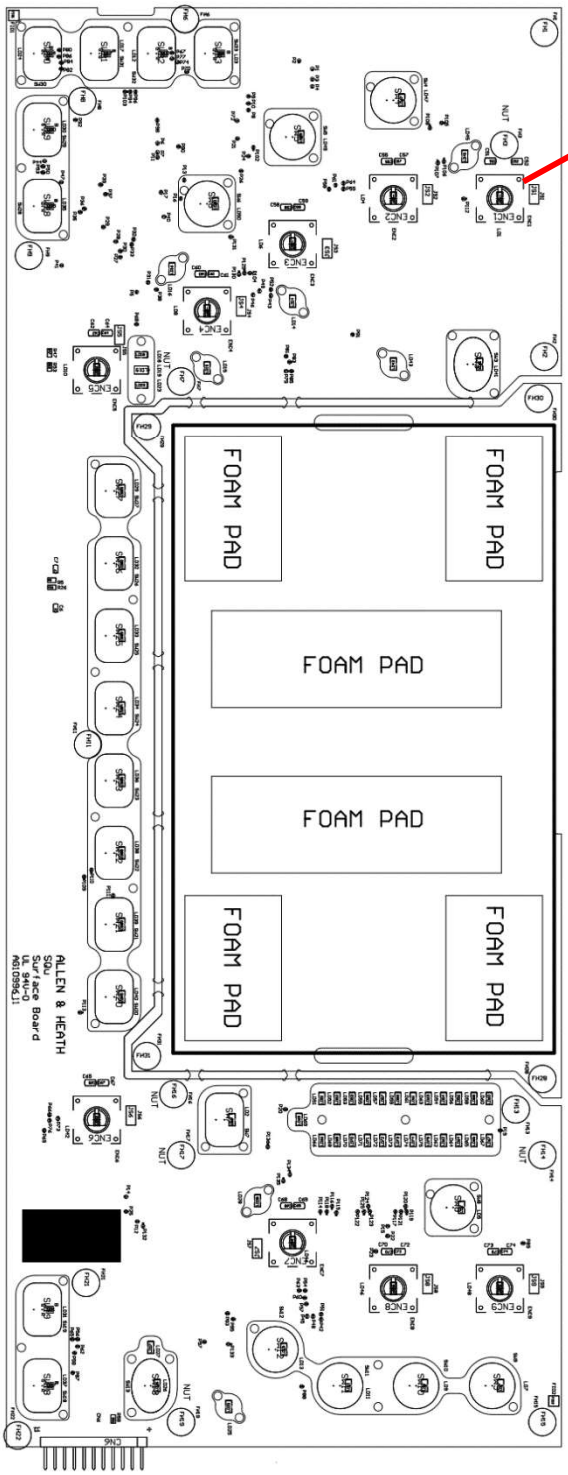
PCB	AG10762
Part Number	004-900
Description	SQ5 17 Fader





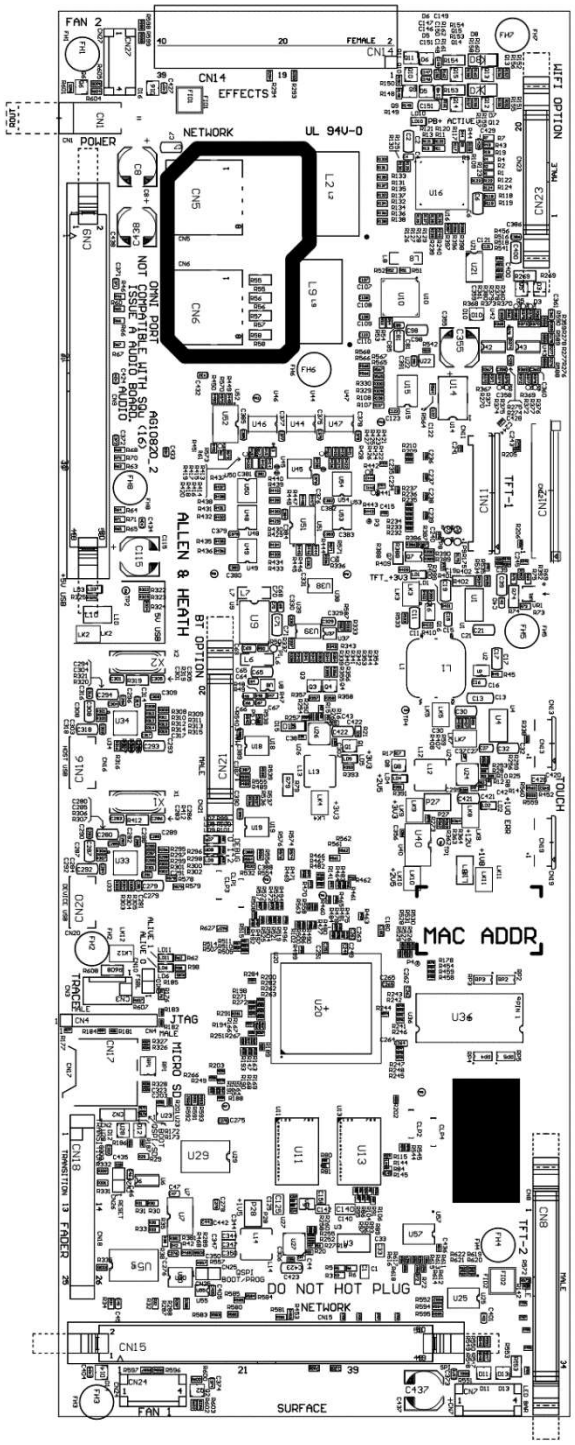
Parts Identification

PCB	AG10996
Part Number	004-932
Description	SQ5 Surface

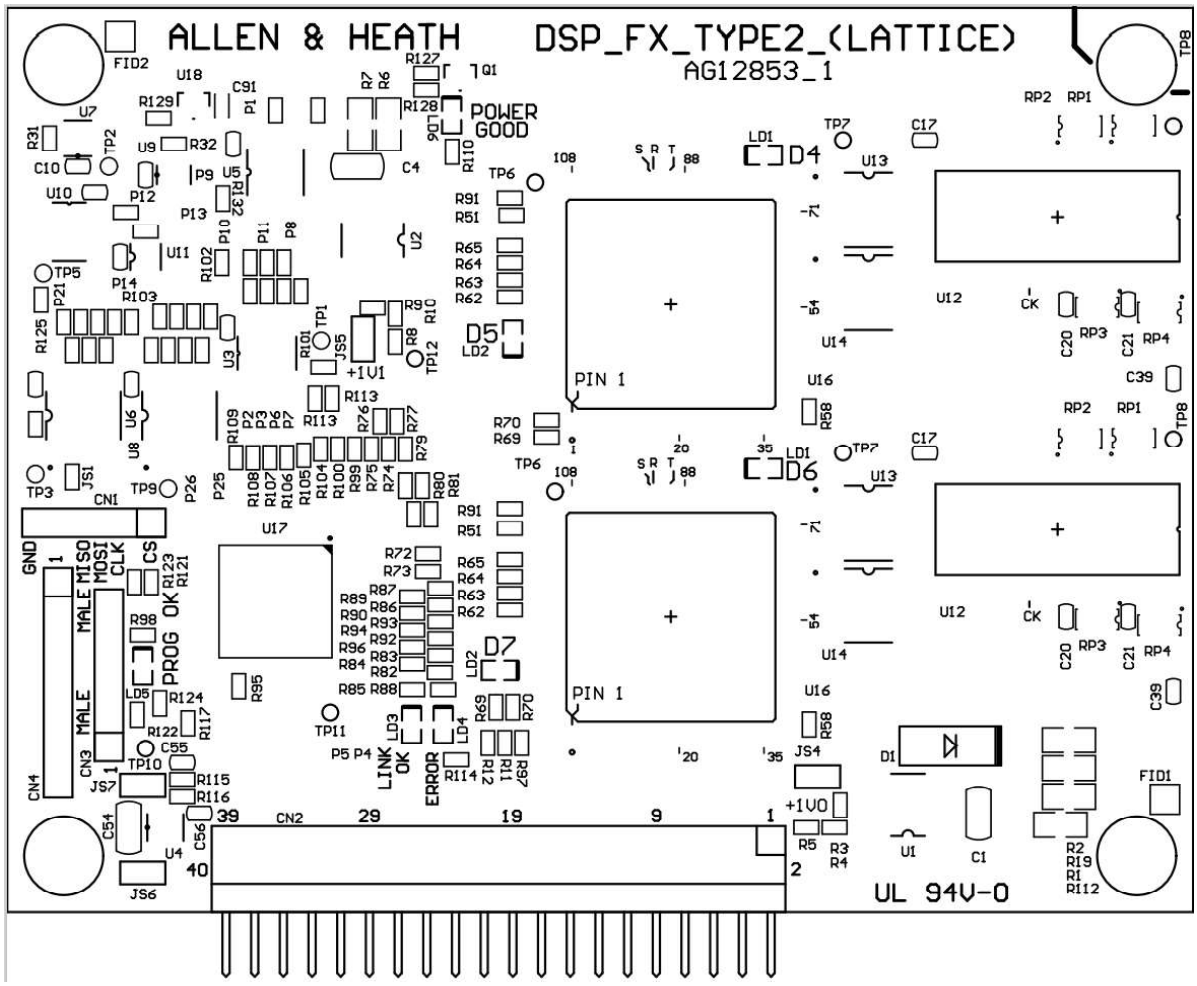


Encod Illum
AI9645
QTY 9

PCB	AG10820
Part Number	004-1504-5 (Previously 004-1045)
Description	SQ5 CPU
*Read the 'Important Information' at the servicing section before fitting this part	



PCB	AG12853 (Previously AG10928)
Part Number	004-1487 (Previously 004-902)
Description	SQ DSP FX Type 2
*Read the 'Important Information' at the servicing section before fitting this part	



Servicing Information

Hot Melt Glue

Some connectors and wireforms/harnesses may be held in place with hot melt glue. You will need 99% Isopropyl Alcohol (propan-2-ol) to remove it. Follow these steps:

- Apply a small amount of 99% Isopropyl Alcohol to a swab and apply it to the edges of the glue
- Leave it for 20 seconds and then pick off the glue by hand or by using a tool that is of low risk to cause damage. Do not use excessive force. If the glue does not come off re-apply the Isopropyl Alcohol.
- Once the glue is removed from the connector release the wireform.
- Once the service/repair is complete re-apply the hot melt glue to secure the wireform in place.

Important Information

- TB 1804: Unresponsive Keys issue
- TB 1901: Add-on Transfers
- TB 1801: Fader Fixings
- TB2312: SQ Bootloader
- RECN 4694: Audio Input/Output Type 2 boards
- RECN 4984: PCBA DSP FX Module Type 2
- RECN 4840: Network PCB DHCP leak
- SQ Faders Cold Joint

For more information see below or click on the following link to access all RECN'S and Technical Bulletins documentation:
Allen & Heath Asset Library

Backup show

To preserve customer data, the settings should be stored and copied to two separate storage devices before attempting any resets or servicing.

After replacing PCB parts Firmware Update must be done.

After replacement of PCBs inside the unit the firmware will need to be updated to ensure that the correct firmware is installed in all parts of the unit.
An updated unit will automatically update the firmware on connected I/O expanders when they are connected.

Calibrations – Touchscreen/Fader

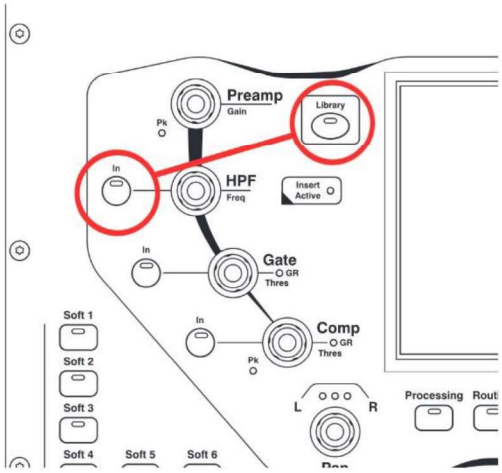
Press the 'Utility' screen key, then touch the 'General' tab followed by the 'Calibration' tab.
Touch the 'Calibrate' button and follow the on-screen instructions, positioning the faders at +10dB, 0dB, -10dB, -30dB and -inf when prompted.

Updating firmware

Firmware is available from the Allen & Heath website under the Software tab:
SQ-5 | Allen & Heath (allen-heath.com)
It should be installed via a USB drive on the desk.
Go to Utility > USB Utility > Firmware Update to install new firmware and view the current firmware version.
You will need to format the USB drive under the Status/Format tab before updating.

Please Note - Known issue (v1.2.0 or less) – Firmware update does not install on both images:
The SQ has a main image and back-up image for stability and redundancy. If an update has been carried out, and the SQ boots into an older firmware, the update should be carried out again to ensure both images are running the same version.

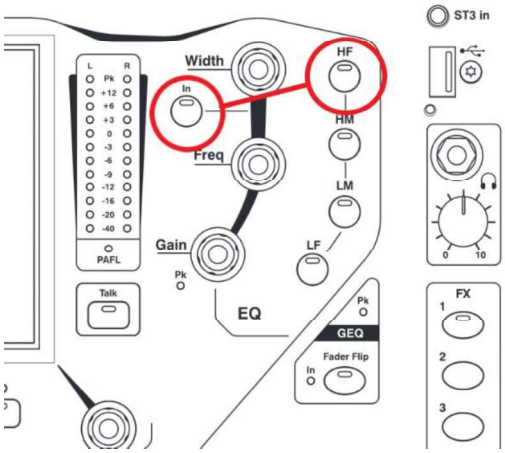
Forced Reinstall of Firmware



Insert USB drive with firmware installed.
Hold the LIBRARY and HPF IN keys when powering the SQ.
Once Channel 1 displays “F/Ware” press Channel 1 Mute button, the signal LED will flash while the firmware is being installed and the mixer will automatically reboot once it’s done installing it.

Please note: A hard reset should be performed after a forced reinstall of firmware.
Please note: If the .bin firmware file is loaded into a folder on the USB, the SQ will not see it.

Hard Reset



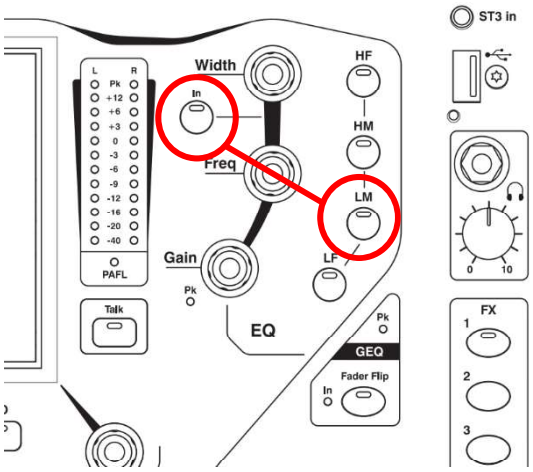
Hold the EQ ‘In’ and ‘HF’ keys when powering on the SQ.

This will clear all mix settings and all saved data, including Shows/Scenes and Libraries, and will revert the SQ to its initial state.

User Settings Reset

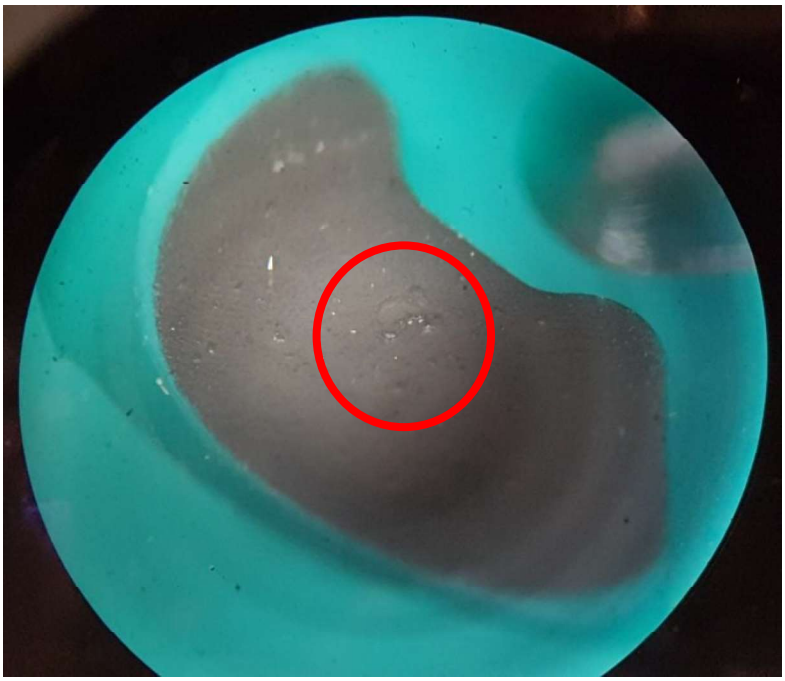
This procedure resets settings for all users. (Settings to be reset include Scenes selection and Passwords)

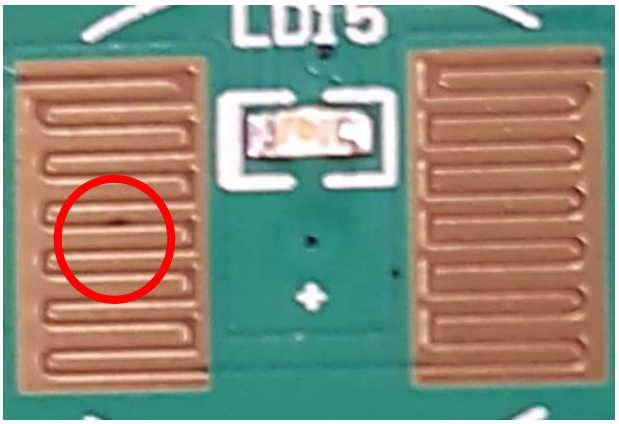
Kindly be advised that this information is confidential and should be treated with discretion, as it could enable non admin users to gain admin access.
Avoid publishing this information online and share with users only in extreme cases.

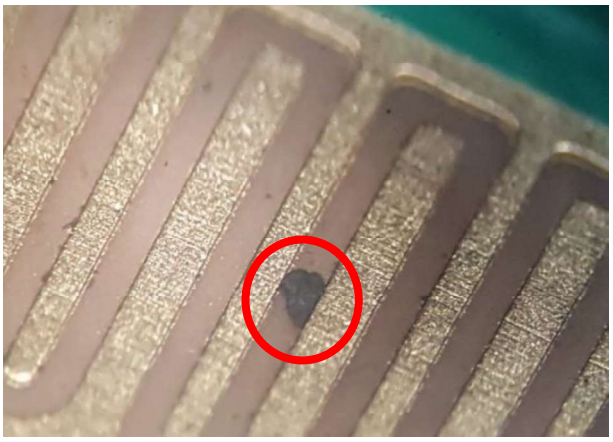


Hold the EQ ‘In’ and ‘LM’ keys when powering on the SQ

TB1804 Unresponsive Keys Issue







Refer to TB1804 for more information

SQ Key Mat Channel – AA11027
SQ Key Mat Top Section – AA11028
SQ Key Mat Lower Section – AA11029
SQ Key Mat Soft Rotary – AA11030
Contact support@allen-heath.com with the affected serial number

TB1901 Add-on Transfers

In case of the following:

- Replacing the CPU board
- Transferring the CPU board
- Replacing the entire unit

Contact support@allen-heath.com for the Add-on Tracking and Transfer form.
Refer to TB1901 For more information

TB1801 Fader Fixings

In rare cases, the top and bottom fixings will show movement when the fader is moved, though the fixing is fully tightened.
If the fixing has been tightened and there is movement apparent, please contact: support@allen-heath.com to request more information.

RECN 4694

All SQ Audio Input and Output boards were updated to 'Type 2' in early 2021, assembly and PCB references were also updated, all production units and spares.

- Both Audio Input and Audio Output boards were replaced by 'Type 2' versions in early 2021.
- Once stock of 'Type 1' boards is exhausted, all production units will be fitted with 'Type 2' boards and all spares provided will also be 'Type 2' boards.

Important note:
'Type 2' Audio Input boards require SQ firmware V1.5.3+.
Input/Output board 'Types' don't need to match. 'Type 1' or 'Type 2' boards can be used on any hardware. 'Type 1' or 'Type 2' input/output boards can be fitted to any SQ-5 unit in any combination (as long as SQ firmware V1.5.3 is running).
Refer to RECN 4694 For more information

RECN4825A

A new connector for the Audio IP/CPU board Trans ribbon cable has been implemented due to the original part having a weak top bar that would wear and become loose. The symptom of the failure is popping/full scale noise that does not show on the meters. A faulty connector does not look flat at the connection point. Refer to RECN4825A for images of the fault.

Implemented from the following serials:

SQ5X-001017378 2022/7/2
SQ6X-001008745 2022/6/18
SQ7X-001006644 2022/6/29

RECN 4984

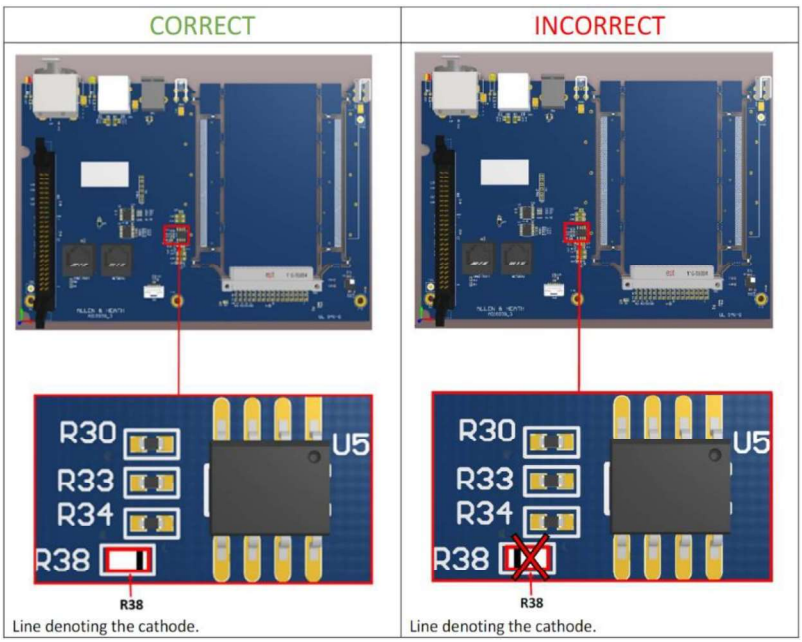
New AE12847 FPGA LFE5U-25F-6MG285C having to replace AE9856 FPGA (XILINX)
This change is implemented in new units from 2022, older units don't require the change.
Spare parts will be supplied with as 004-1487

DSP FX Module Type 2 AG12853 / Part number: 004-1487 replaces DSP FX AG10928 / Part number: 004-902

Important note: Firmware V1.5.6 or greater required for new 004-1487 PCBA SQ DSP FX MODULE TYPE2
Refer to RECN 4984 For more information

RECN 4840

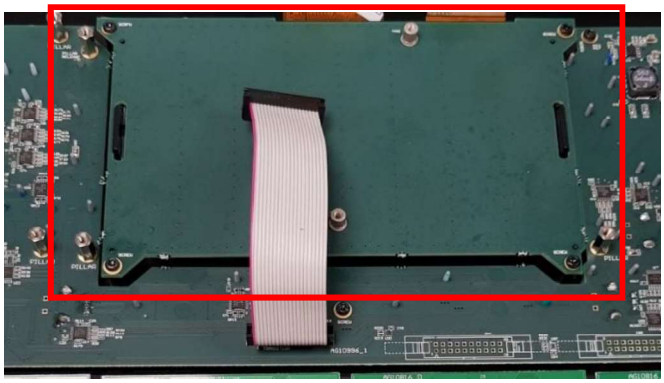
On units manufactured between January 2020 and September 2021, an incorrectly fitted diode on 004-918X PCBA Network Board (AG10938_3) can cause the network bridge to become briefly active during the power up process. This can cause incorrect IP address assignments in a network connected via the IO Port when DHCP is enabled.



While correcting the orientation of the diode solves this issue, we recommend against component level repair and the PCB should be replaced. All new spares stock has been updated.
Refer to RECN 4840 For more information

004-1696KITX

LCD TFT gets fitted on break off PCB belonging to the Surface PCB as shown here:



Kindly note that this Break Off part should **not** be scrapped or thrown away during service. However, in the case of missing this part, a spare part can be supplied under part number: **004-1696KIT**

TB2312 Bootloader Update

A number of SQ units manufactured in December 2022, may incorrectly flag their installed Firmware as corrupt during **boot**.

Intermittent: The frequency of this occurring can be anywhere from 1/5 boots to 1/500 boots or less.

The issue presents as an SQ that boots directly into the forced firmware update state, with a **blank screen and 4 select LEDs on channel strips 9-12 that scroll from left to right.**

Installing firmware from this state *will* get the mixer back to full working order and without loss of stored data, but the firmware may be incorrectly flagged as corrupt again in the future.

Note that this fix is not required for all consoles, only those presenting this issue.
Updating the bootloader carries the risk of 'bricking' the console if carried out incorrectly, so we do not advise updating unless **absolutely necessary**.
If the update is carried out incorrectly or incompletely (e.g. the unit loses power or the drive is removed during the update) and the unit is 'bricked', the CPU board will need to be replaced.

The **bootloader files and update instructions** can be downloaded from the Allen & Heath website.

Download page: https://www.allen-heath.com/hardware/sq/sq-bootloader/

Password for ZIP: XDxj9hEq

The firmware image can be downloaded from the usual website location.

Download page: https://www.allen-heath.com/resources/

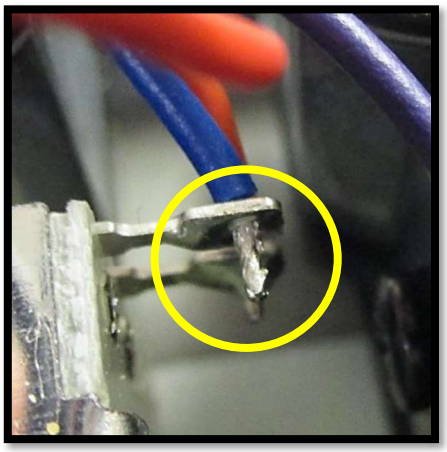
Refer to TB2312 For more information

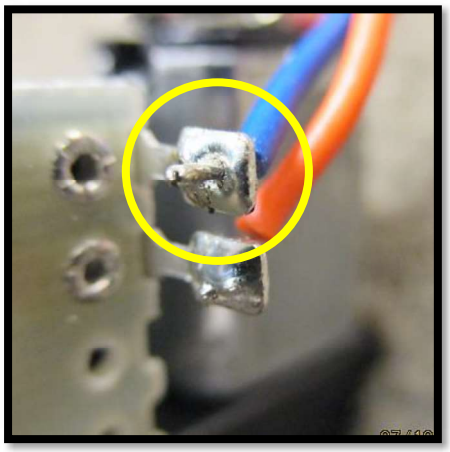
SQ Faders Cold Joint

SQ units presenting the following symptoms:

- Slamming: Faders hitting the Top or Bottom edges.
- Ghost movements: Movements of the fader without the user touching them.
- Fader Unresponsive: Fader not moving at all

Are likely to be caused by a cold joint of solder between the Fader Wireform and the Fader Motor.





We kindly request for the service technician performing service on the unit, to identify the symptom and proceed as follows:

- Check the soldering of the Wireform vs the Motor
- If a cold joint is identified, please proceed to re-solder this accordingly

It is not required to replace faders with this issue, as this symptom can be fixed with the above procedure.

Other symptoms present on faders, such as ‘Rattling’ or ‘Slow Faders’ may be due to a different cause, in which case a replacement of the Fader may be required.

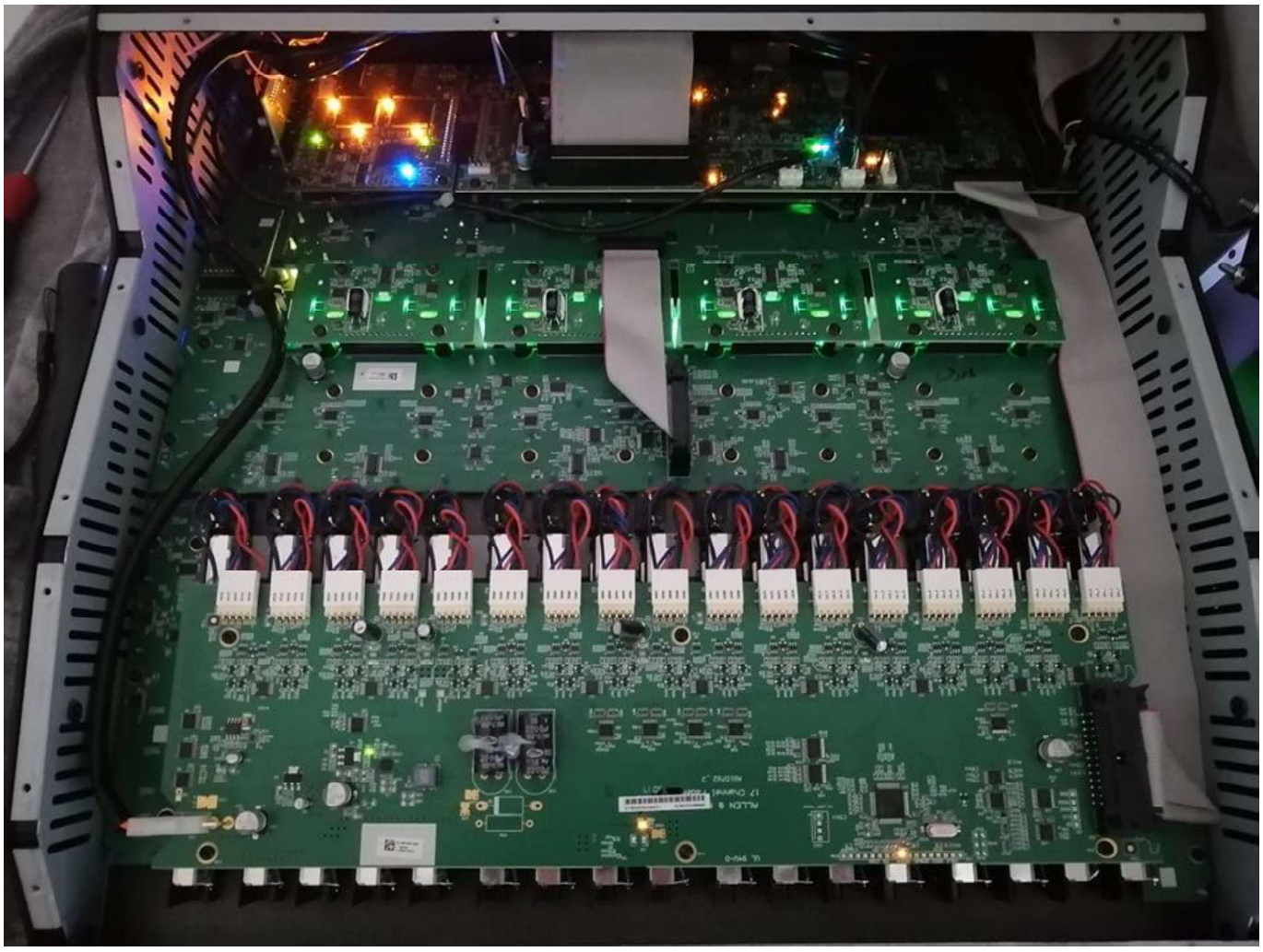
Diagnostics

A number of LED's are placed on the main CPU, Fader board, DSP-FX board and I/O cards to help monitor activity on these boards. This includes LED's for power rails, high speed link, and FPGA/DSP programmed and active.

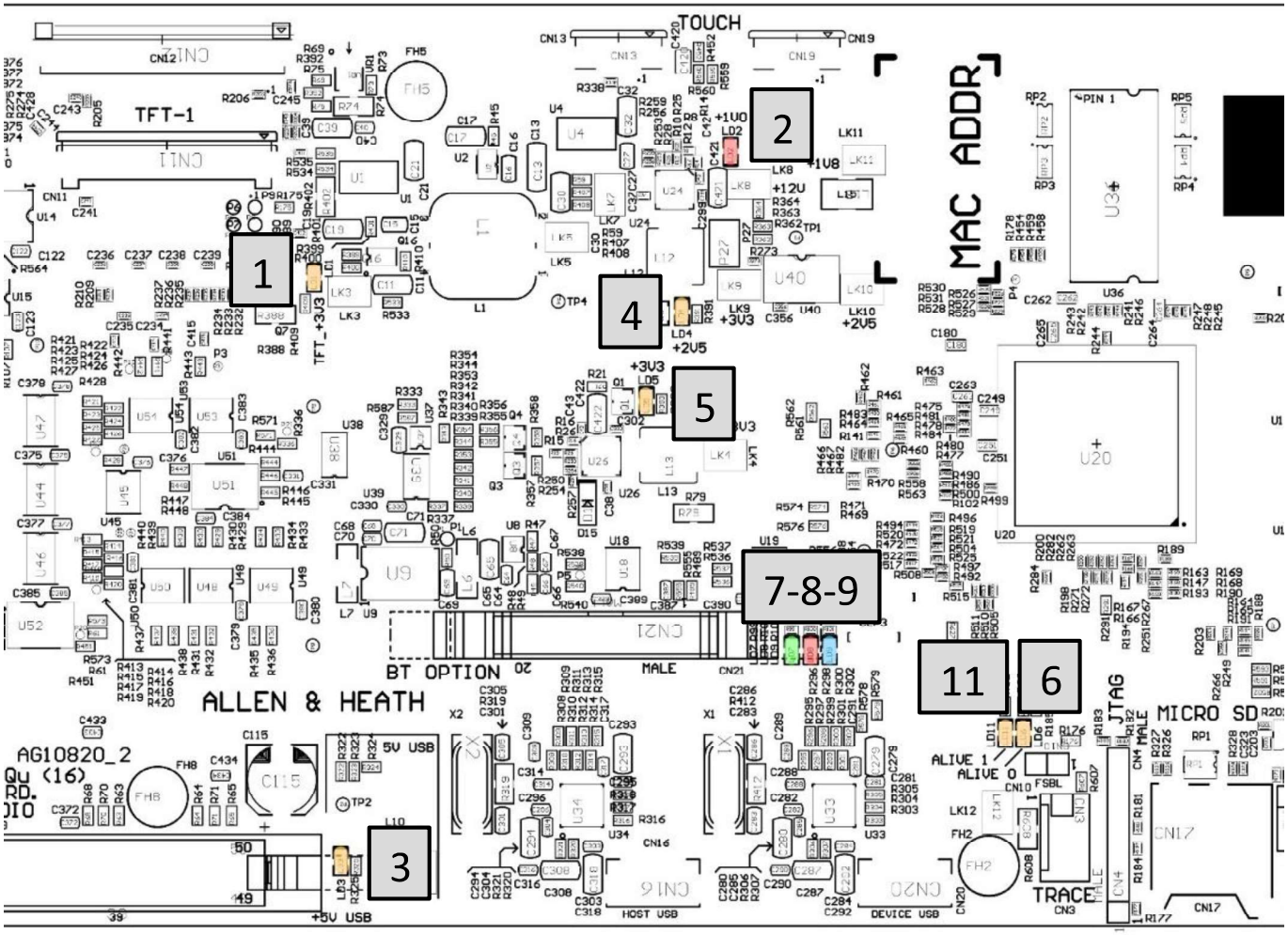
The Blue LED on the rear of the unit should be static.

Due to the presence of these LED's, there are less needs for power rail test points.

Also supplied are routing overviews for Power Distribution and Control/Audio routing. Use these to identify associated PCB's when a fault occurs.



CPU LEDs



LD1 = +3V3 Power for TFT Screen. Yellow LED,
On Solid = Power Good

LD2 = +1V0 Error Red LED.
On Solid = CPU power issue.

LD3 = +5V USB Yellow LED, Power for SQ-Drive port.
On Solid = Power Good

LD4 = +2V5 rail Yellow LED.
On Solid = Power Good

LD5 = +3V3 rail Yellow LED. (Indicator for +1V0, +1V5, +1V8, +2V5, +3V3 and +12V rails)
On Solid = Power Good

LD6 = ALIVE 0 = USB
Yellow LED, Displays heartbeat pattern.

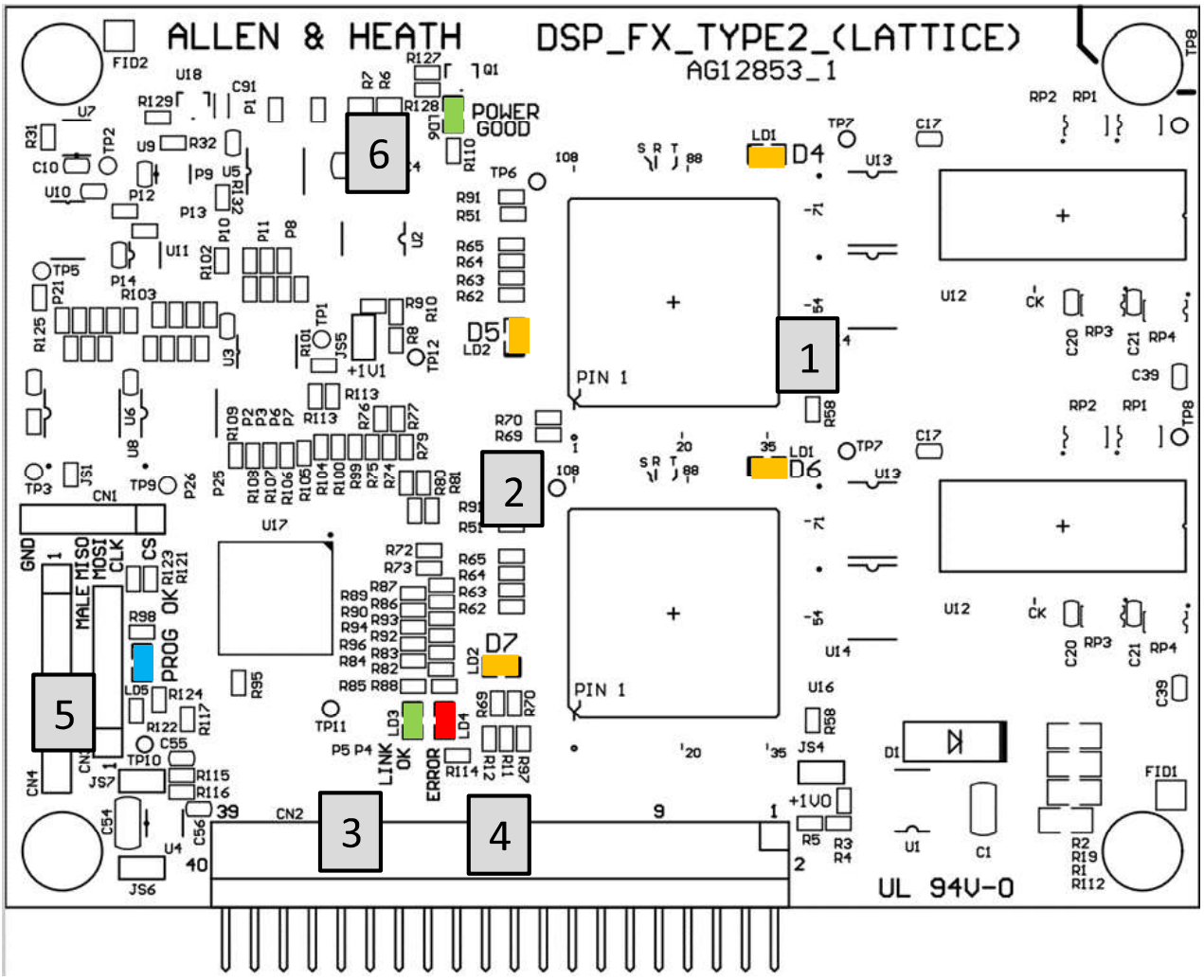
LD7 = Debug 0 = High Speed Link (HSL) between CPU, DSP FX and IO Card.
Green = Good

LD8 = Debug 1 = HSL Error. On for 5 second on power up. Red = Error, Off = Good.

LD9 = Debug 2 = FPGA Alive Blue LED, Displays heartbeat pattern.

LD11 = ALIVE 1 = Core (Screen & Faders)
Yellow LED, Displays heartbeat pattern.

DSP FX LEDs



LD1B = DSP Program indicator Yellow LED (U16A & U16B)
On Solid = DSP Programmed

LD2 = DSP Program indicator Yellow LED
On Solid = DSP Programmed

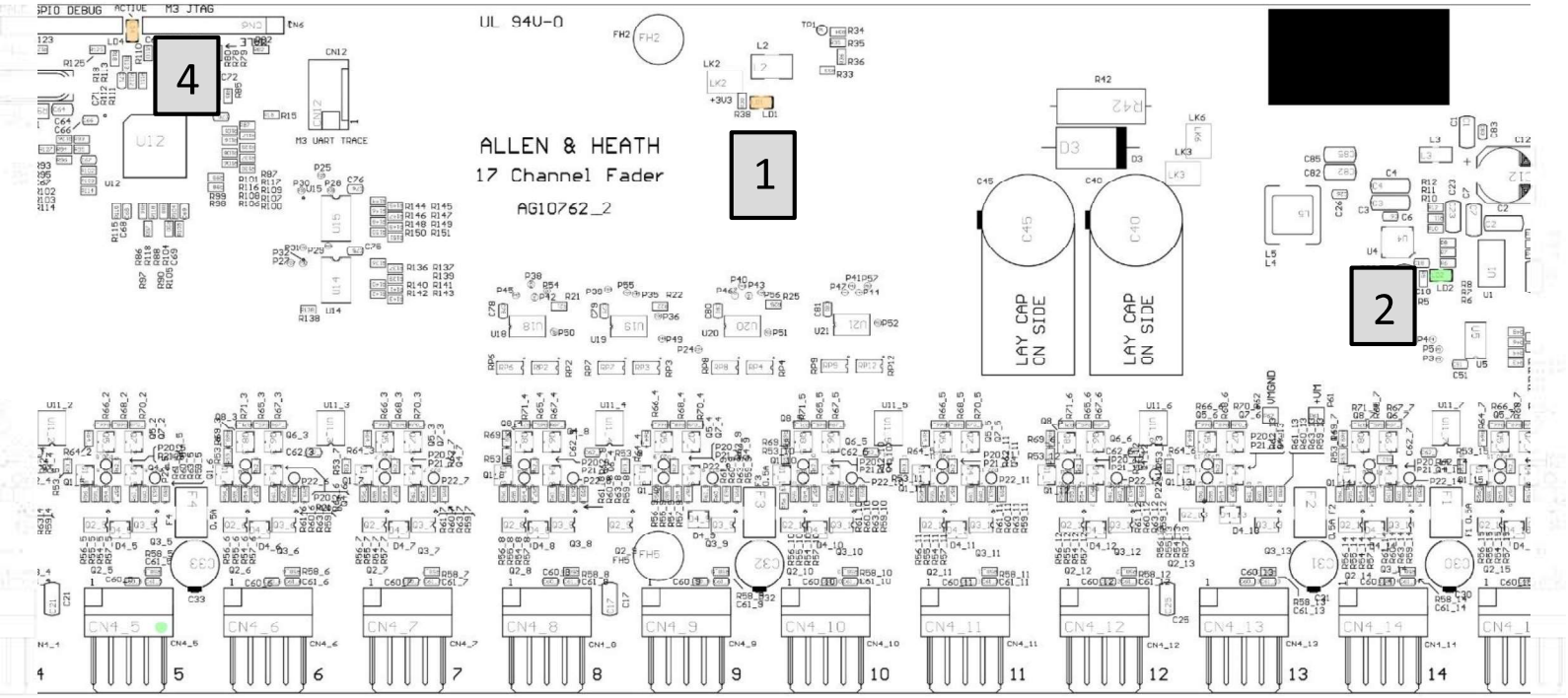
LD3 = Link OK = HSL status Green LED.
On Solid = Link OK

LD4 = ERROR = HSL Error indicator Red LED.
On solid = Error, Off = Good
Illuminates for 5 seconds during power up.

LD5 = Prog OK = FPGA Programmed.
Blue LED displays heartbeat pattern.

LD6 = +3V3 rail Green LED.
On Solid = Power Good

Fader Board LEDs

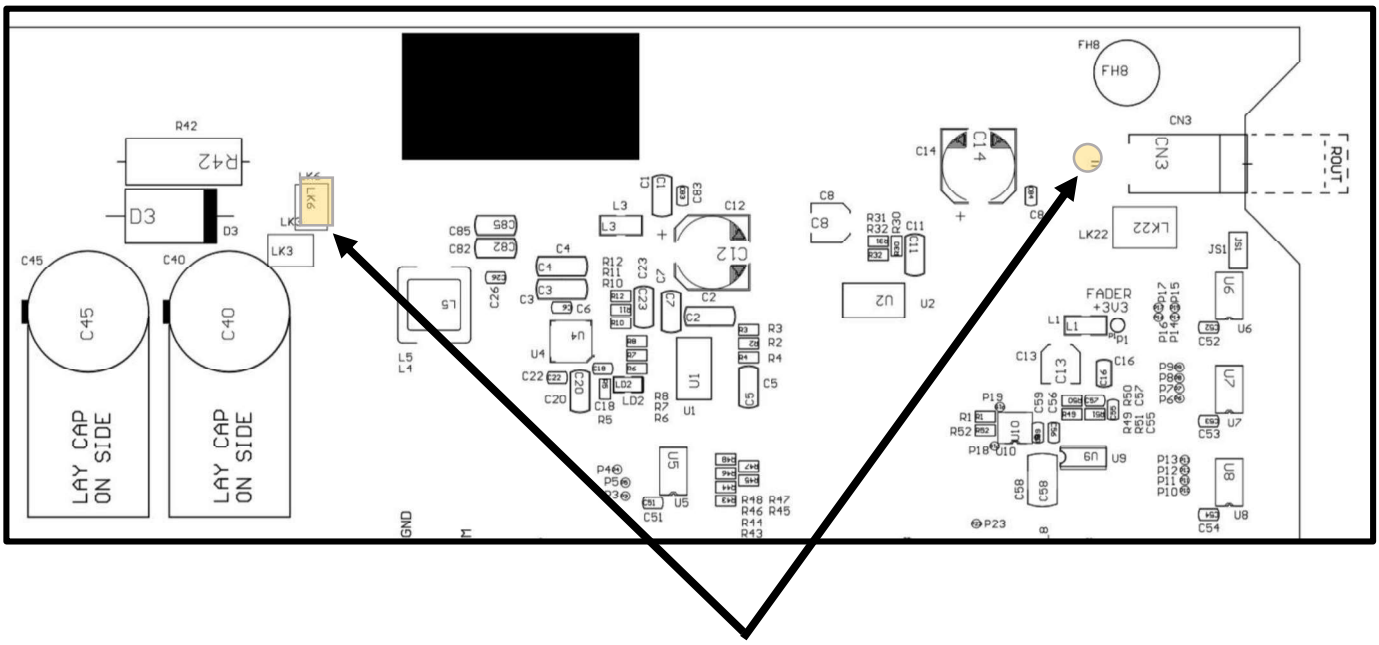


LD1 = +3V3 rail Yellow LED. On Solid = Good

LD2 = +5V Fader Motor power good indicator Green LED. On Solid = Power Good

LD4 = Active = Processor Active Yellow LED. Displays heartbeat pattern.
The processor is powered by the +3V3 rail, if this LED is off, there is likely an issue with the +3V3 rail.

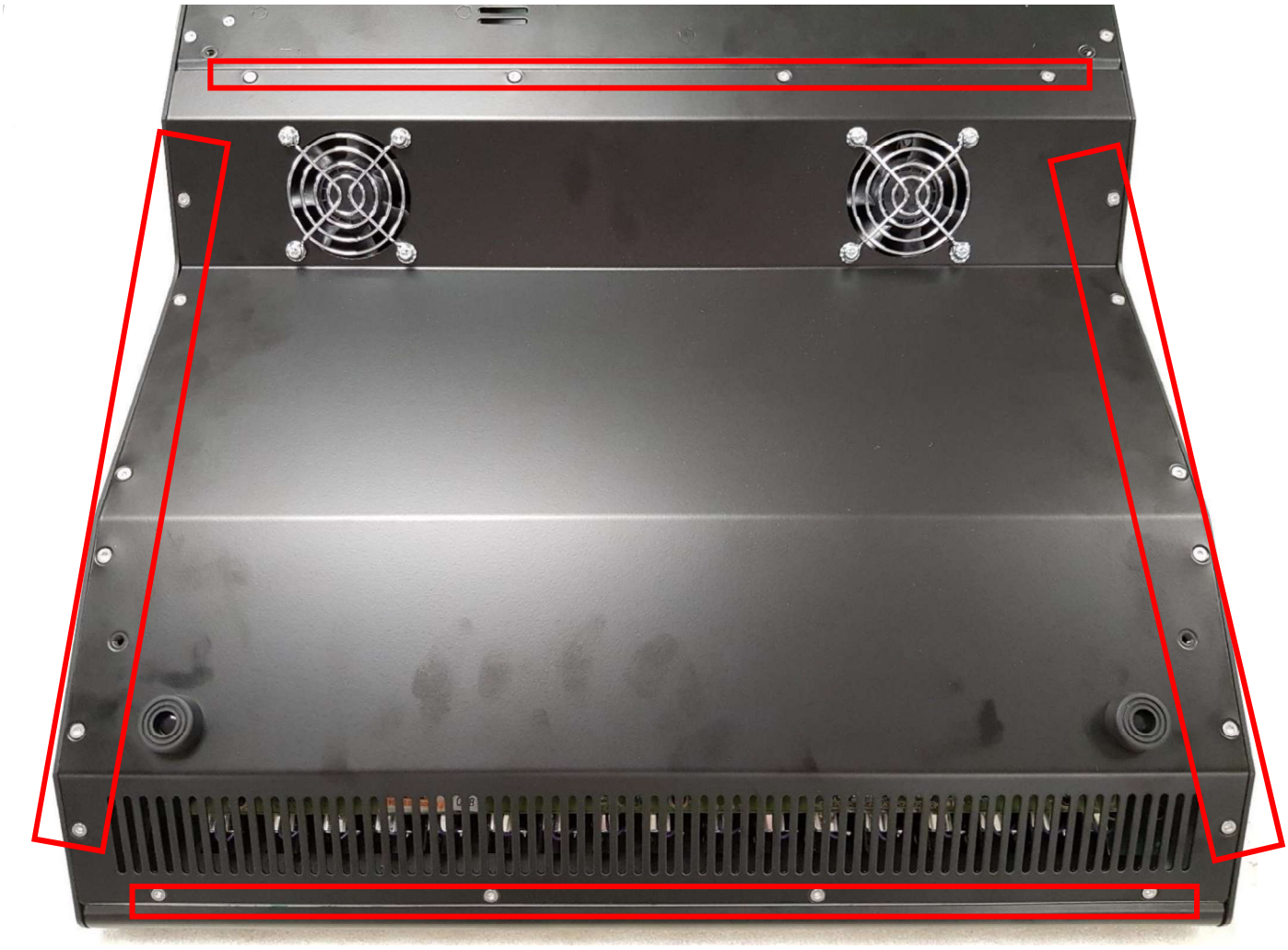
Fader Motor Test Points



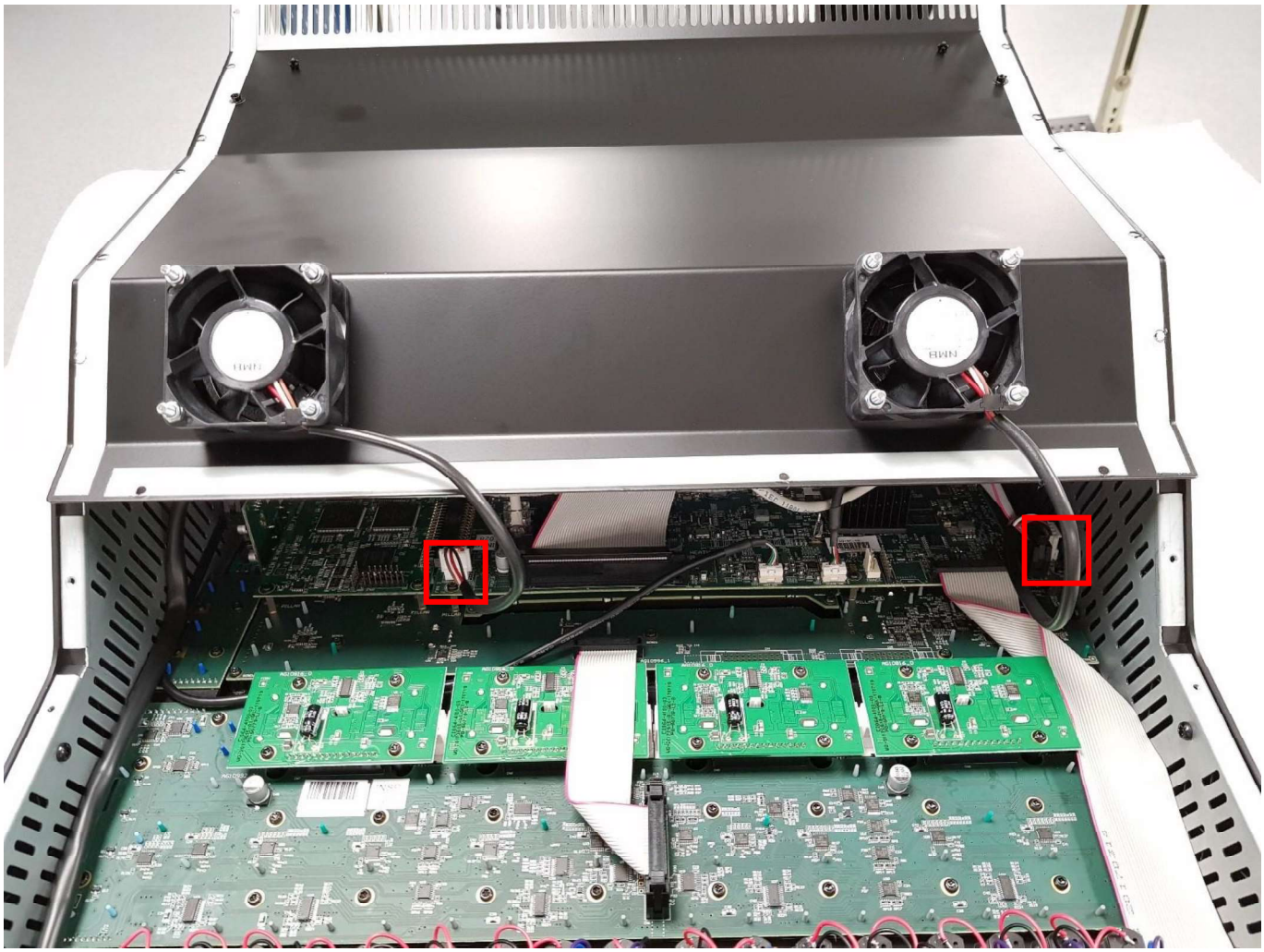
Test between CN3 pin and LK6 pad.

Disassembly Procedure

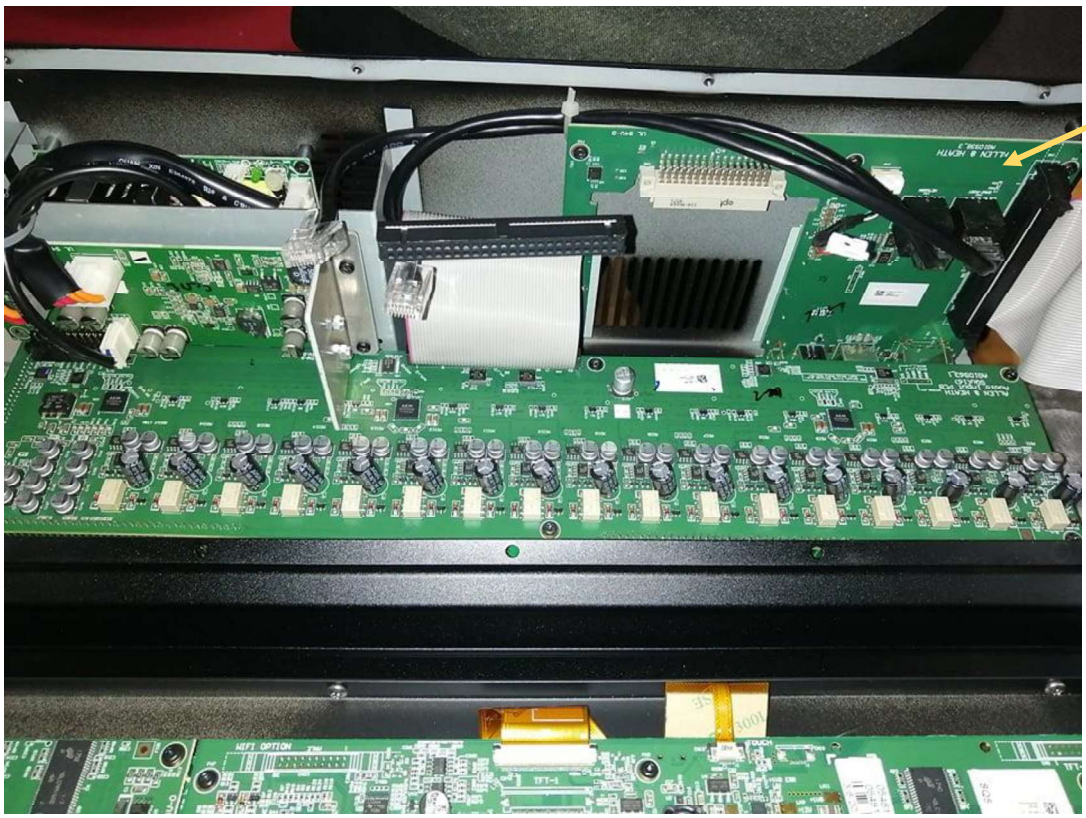
Bottom Panel



Fans



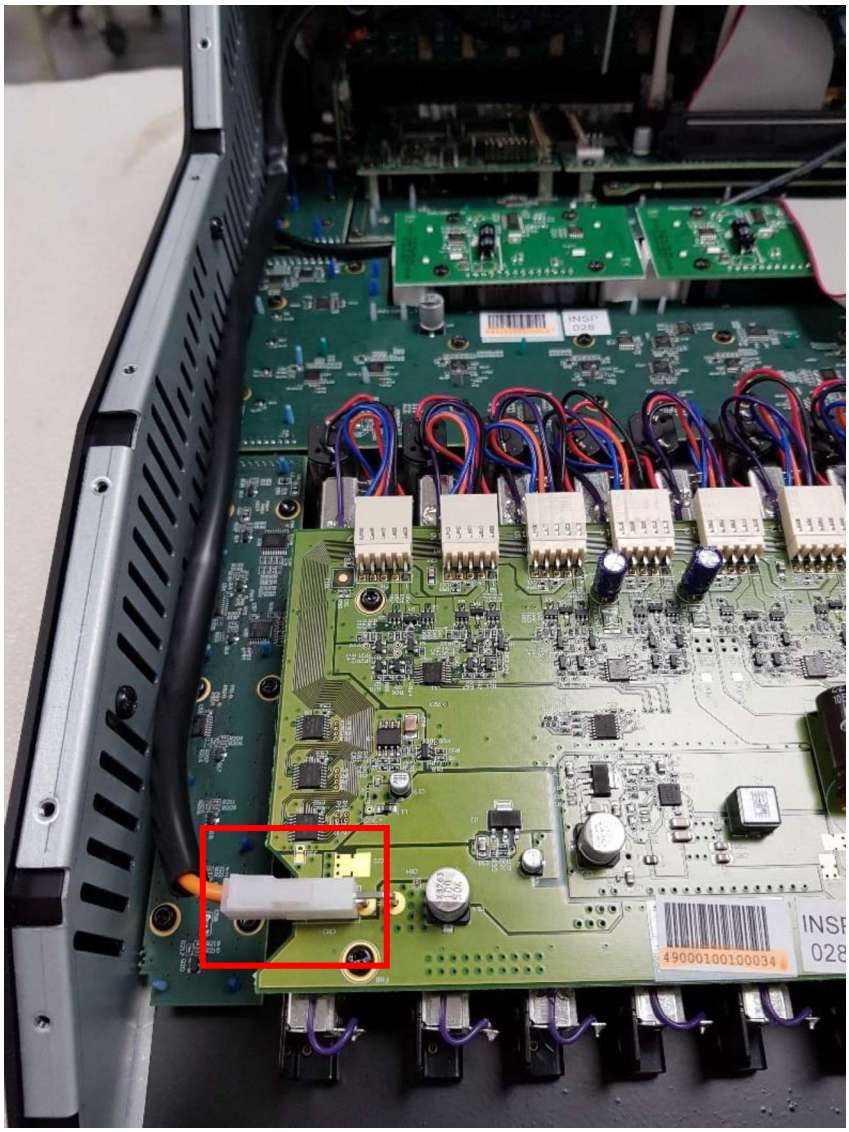
Back Panel



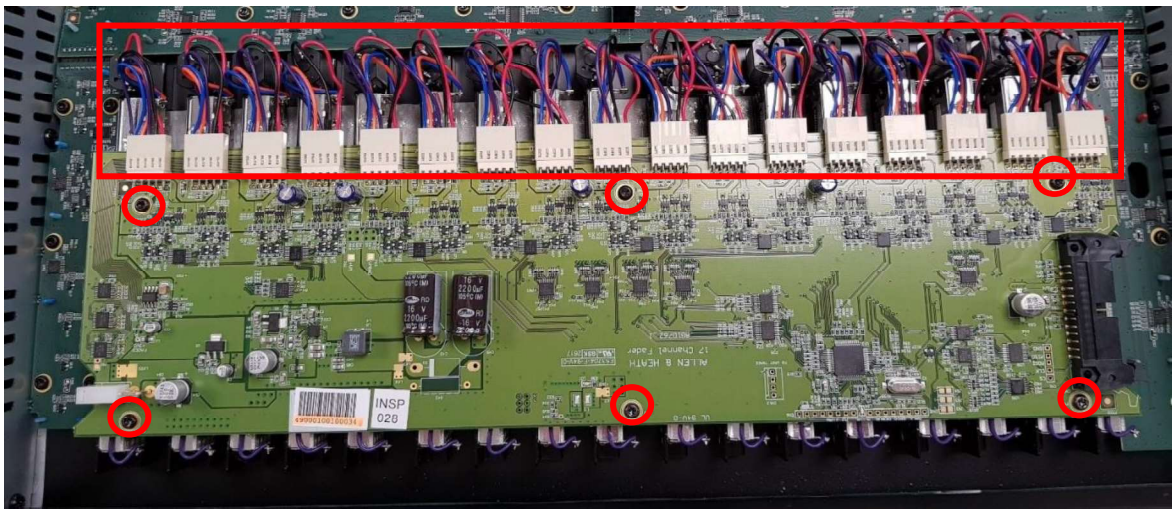
Removing Back Panel

- Disconnect fader strip from power supply
- Disconnect short USB cable
- Disconnect ribbon cable from Audio Inputs board
- Disconnect side ribbon cable from Network board
- Disconnect side ribbon cable from Phones board
- Disconnect two ethernet cables from Network board

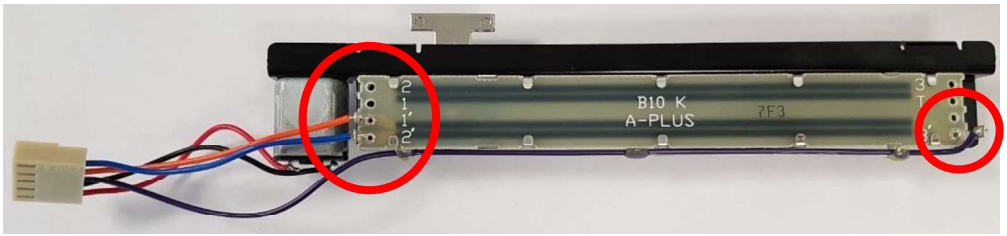
12v Fader Motor Supply

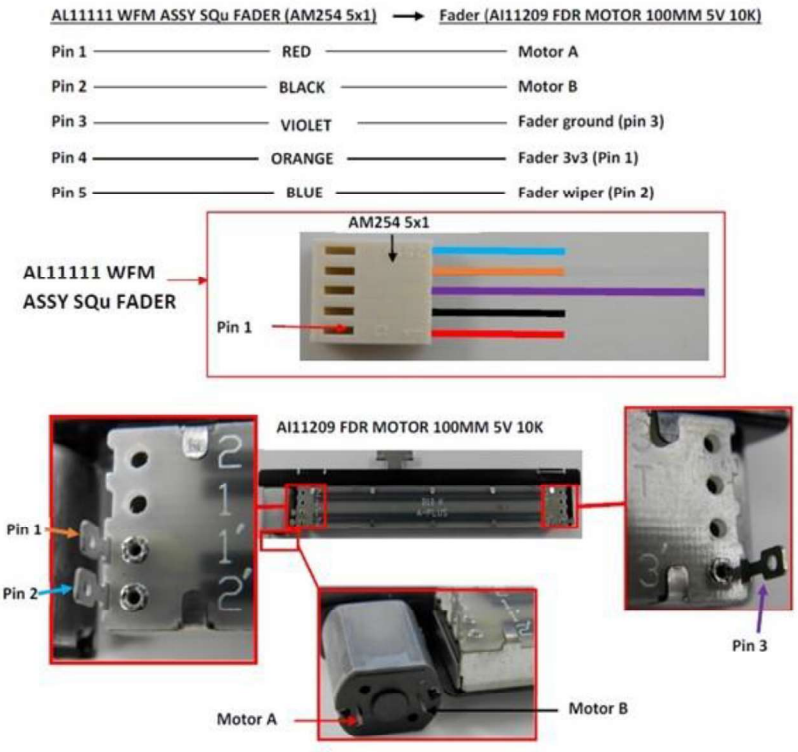


Fader PCB

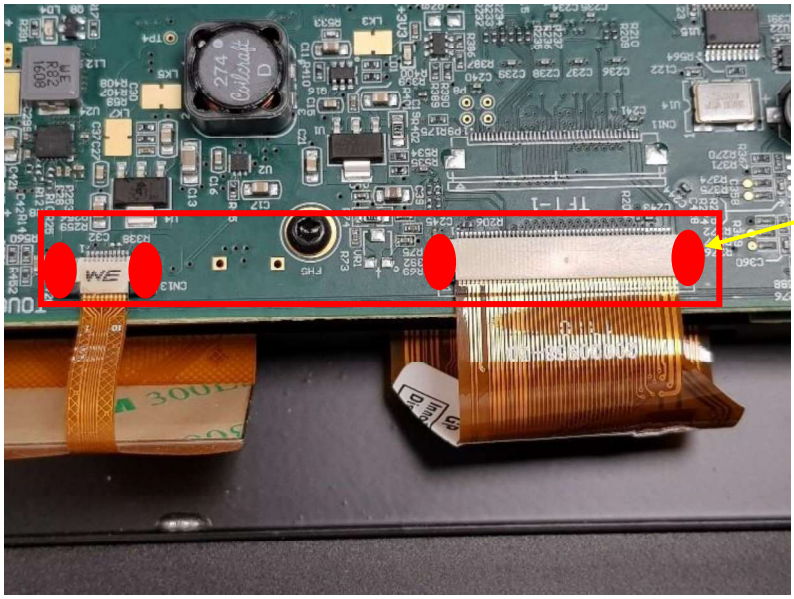


Fader Wiring



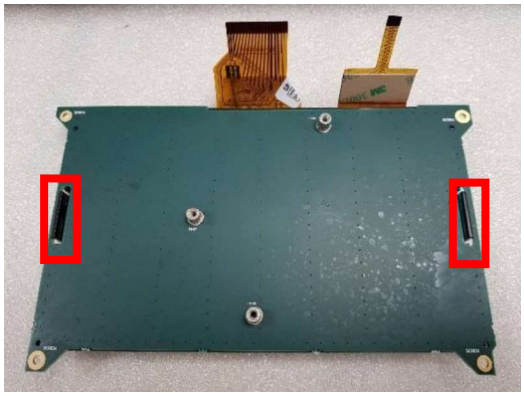

AL11111 WFM ASSY SQu FADER (AM254 5x1) → Fader (AI11209 FDR MOTOR 100MM 5V 10K)
Pin 1 — RED — Motor A
Pin 2 — BLACK — Motor B
Pin 3 — VIOLET — Fader ground (pin 3)
Pin 4 — ORANGE — Fader 3v3 (Pin 1)
Pin 5 — BLUE — Fader wiper (Pin 2)
AM254 5x1
AL11111 WFM ASSY SQu FADER
Pin 1
AI11209 FDR MOTOR 100MM 5V 10K
Pin 1
Pin 2
Pin 3
Motor A
Motor B

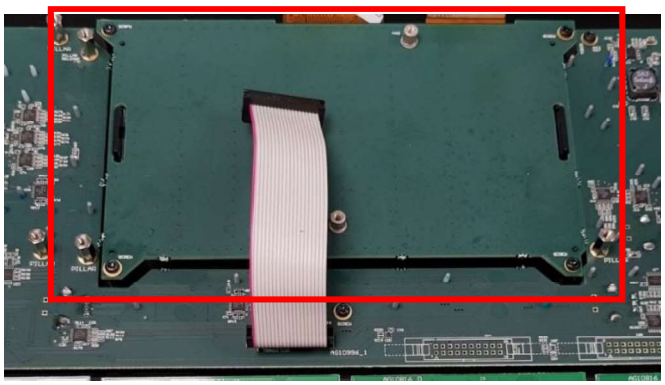
Screen Connection



After connecting LCD TFT apply hot melted glue to each connector in the areas marked to secure connectors.

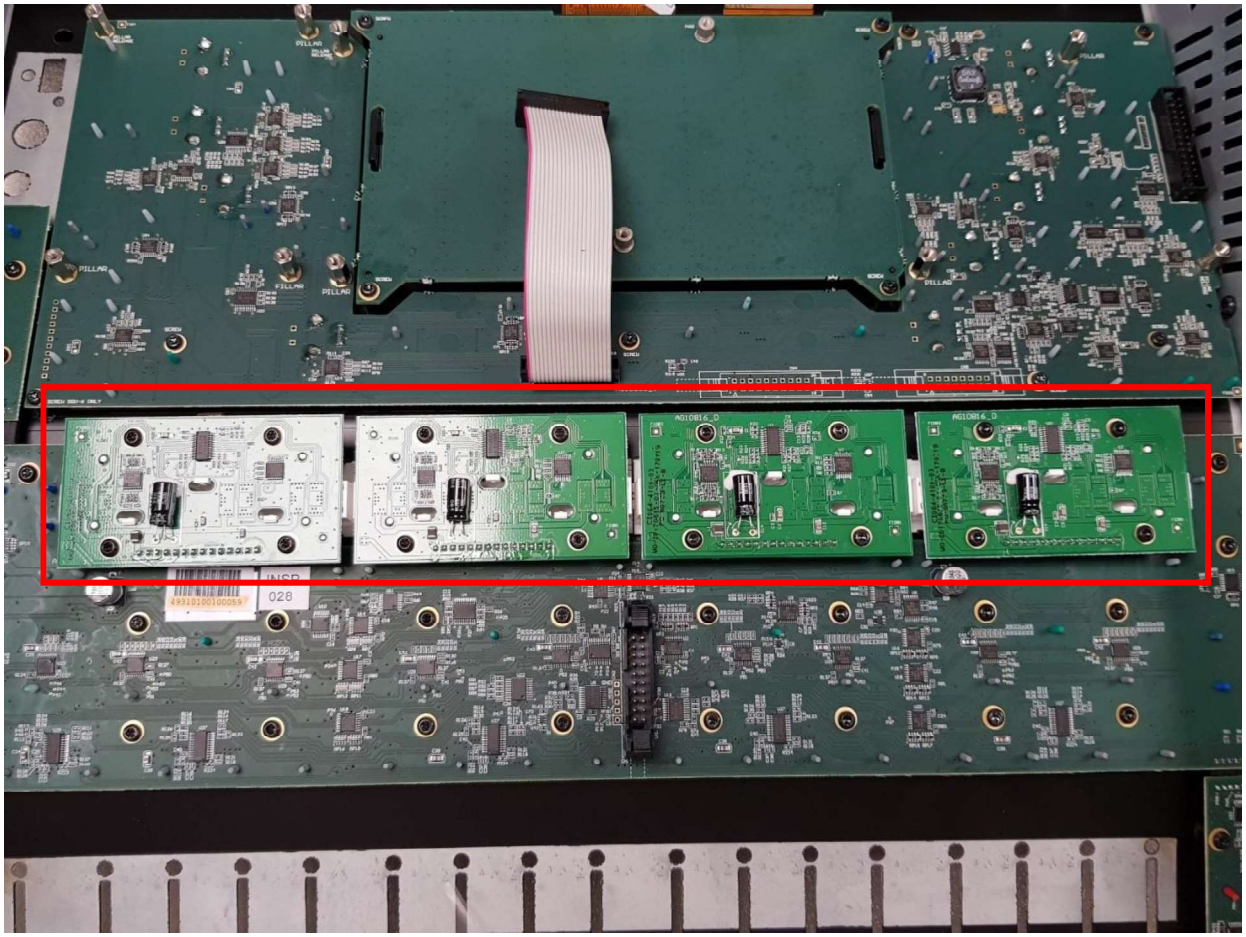
Screen Mounting



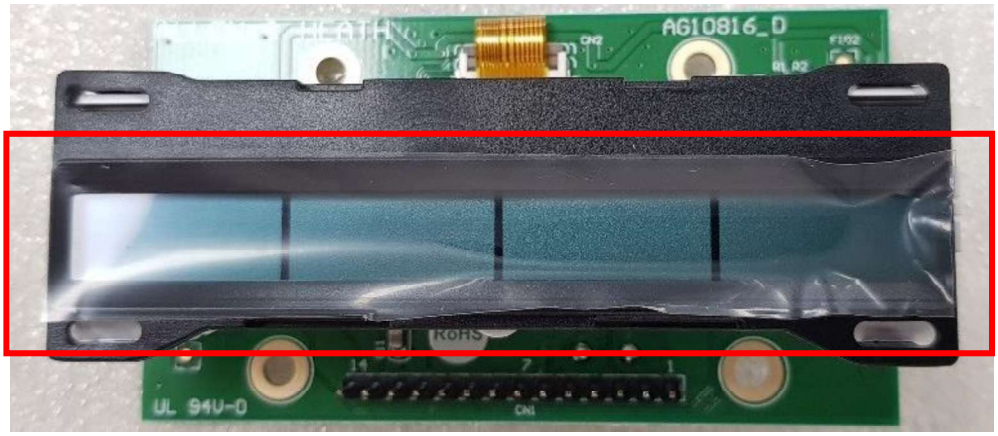


Remove the back panel of the screen assembly by pressing the black locks of the sides.

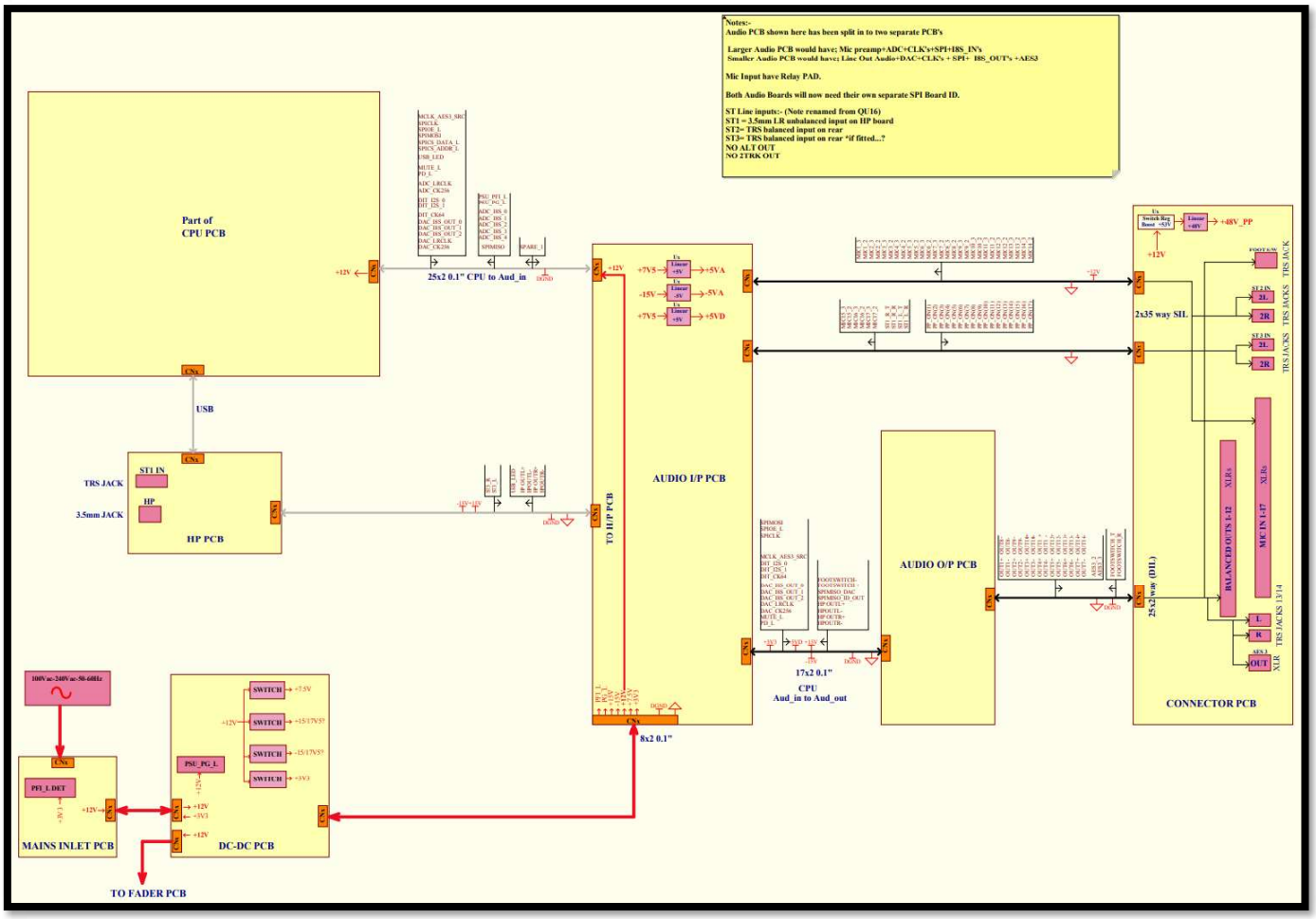
LCD Mounting



LCD Bezel



Power Distribution


Notes:-
Audio PCB shown here has been split in to two separate PCB's
Larger Audio PCB would have; Mic preamp+ADC+CLK's+SPI+HS_IN's
Smaller Audio PCB would have; Line Out Audio+DAC+CLK's + SPI+ HS_OUT's +AES3
Mic Input have Relay PAD.
Both Audio Boards will now need their own separate SPI Board ID.
ST Line inputs:- (Note renamed from QU16)
ST1 = 3.5mm LR unbalanced input on HP board
ST2= TRS balanced input on rear
ST3= TRS balanced input on rear *if fitted...?
NO ALT OUT
NO 2TRK OUT
Part of CPU PCB
25x2 0.1" CPU to Aud_in
USB
TRS JACK
3.5mm JACK
HP PCB
AUDIO I/P PCB
TO H/P PCB
8x2 0.1"
AUDIO O/P PCB
17x2 0.1"
CPU
Aud_in to Aud_out
2x35 way SIL
25x2 way (DIL)
CONNECTOR PCB
MAINS INLET PCB
DC-DC PCB
TO FADER PCB

- 12v supply for motors from DC-DC
  - From PSU to Fader Board CN3 = +12v & Ground

CPU distributes power

- 3v3 supply for fader logic from CPU

- From CPU CN18 to Fader Board CN5:

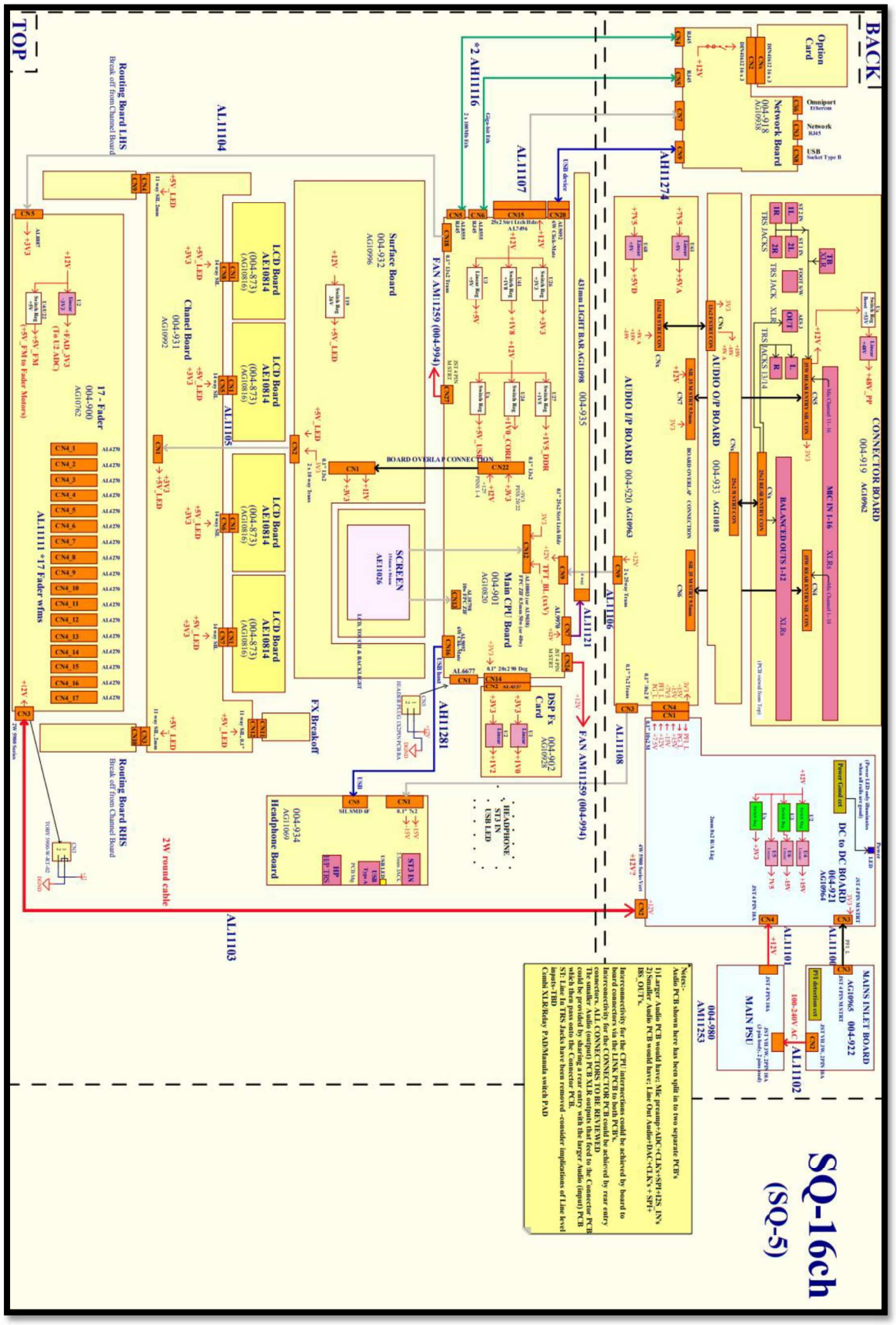
Pins 1, 5, 7, 9 = +3v3

- 12v through audio input to CPU
- From Audio board to CPU CN9
  - Pins 1, 2, 3, 4, 5 & 6 = +12v
  - Pins 21, 35, 41, 48 & 49 = +3v3
- PFI & Mute Control
  - PSU PG L = CN9 pin 39
  - PSU PFI L = CN9 pin 37
  - Mute = CN9 pin 40

- From CPU CN14 to DPS's
  - Pin 1 = +12v
  - Pins 7, 9, 11 and 13 = +3v3

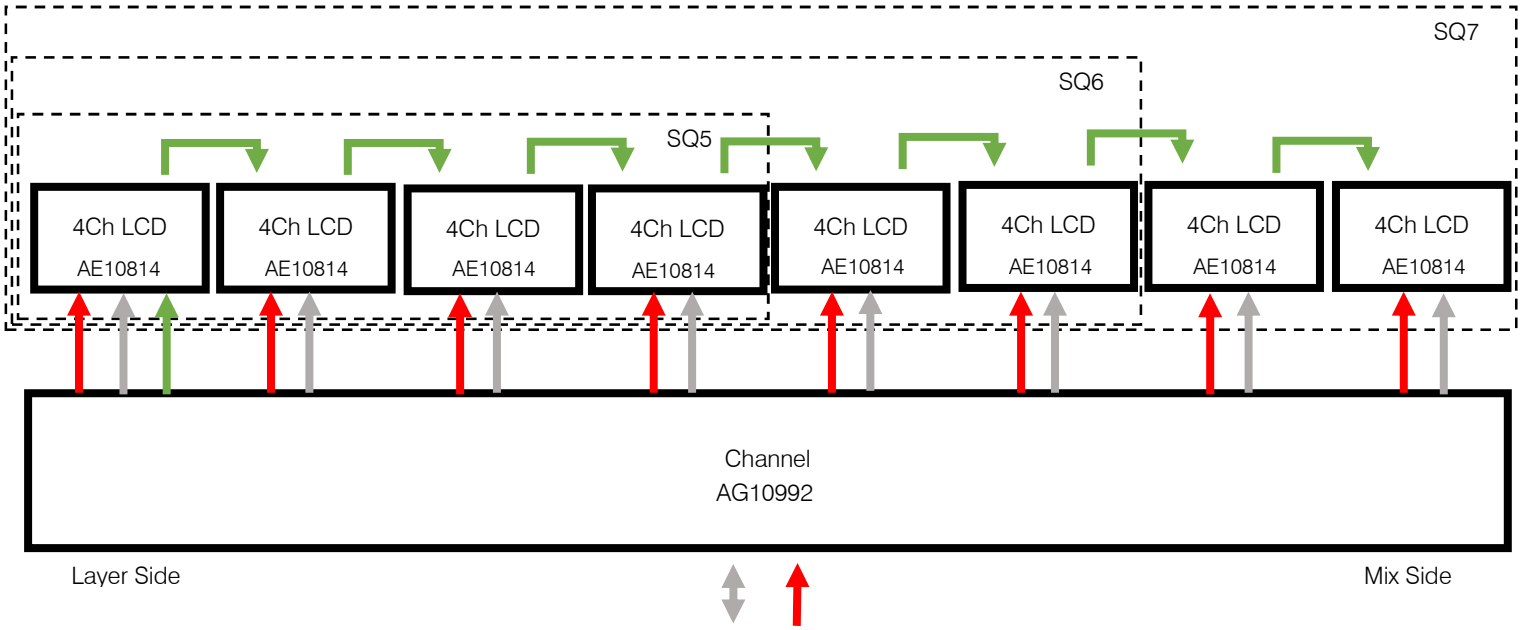
- From CPU CN15 to Network
  - Pins 1 & 2 = +12v
  - Pins 5 & 6 = +3v3
- From CPU CN22 to Surface board
  - Pins 1 & 2 = +12v
  - Pins 5 & 6 = +3v3
- From CPU CN8 to Screen TFT
  - Pins 1 & 2 = +12v
- Fans CN24 & CN27 = +12v through pin 4
- Light bar CN7 = +12v through pin 4

Routing Overview



LCD Screen Overview

= Power
= Text Control
= Backlight Control



Other Technical Information

Block Diagram

Specifications

Weights & Dimensions

All of this information is available to end users and can be found at the following location:

SQ - Allen & Heath (allen-heath.com)

For further information please contact Allen&Heath Product Support

Product Support - Allen & Heath (allen-heath.com)